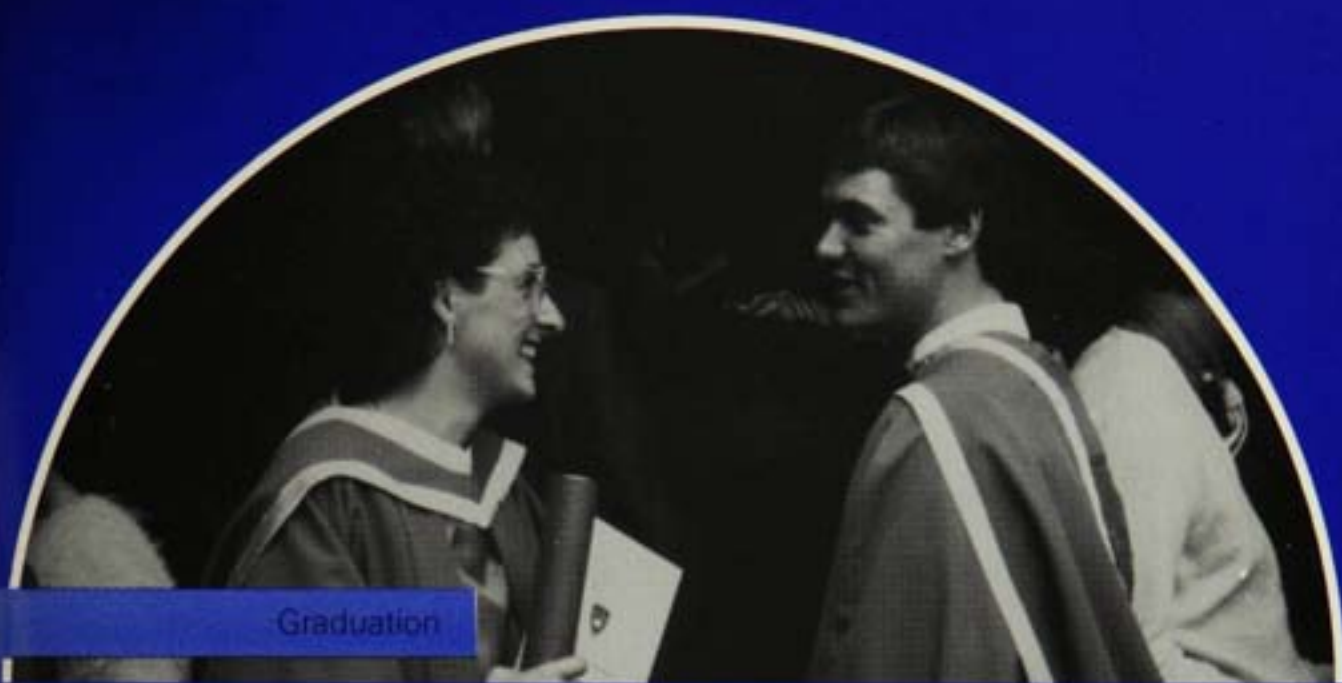
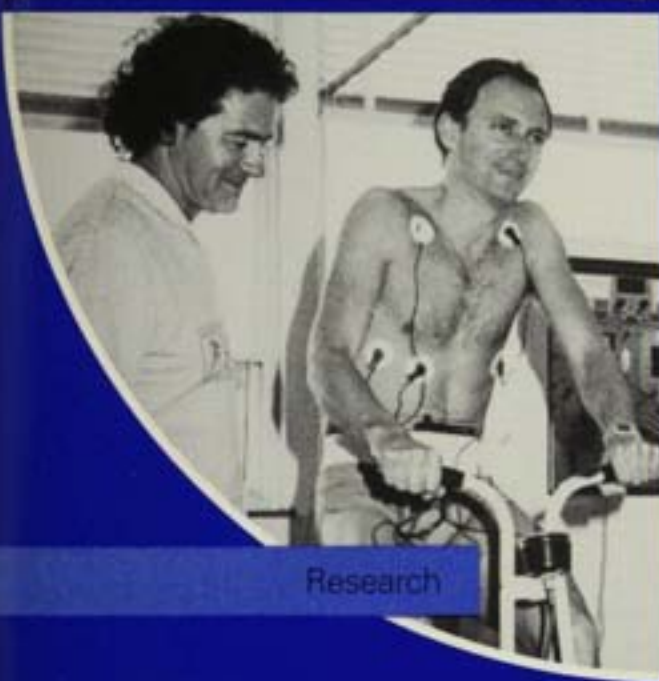


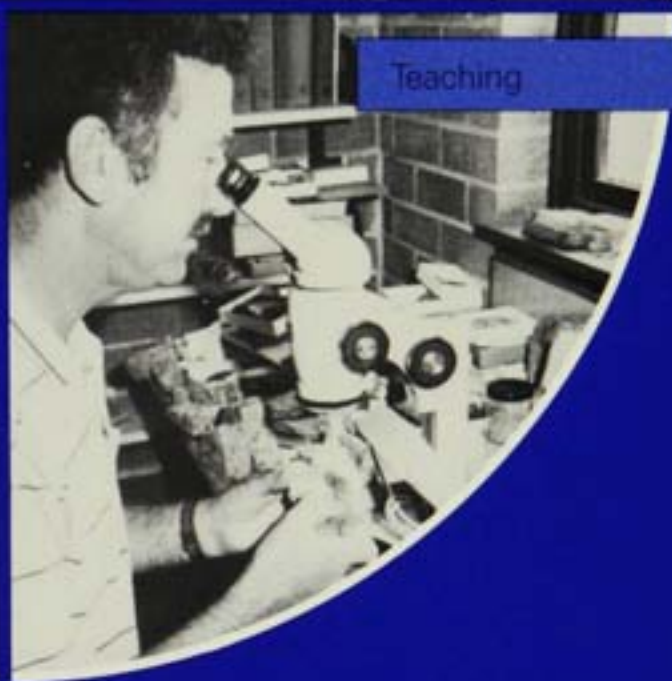
THE UNIVERSITY OF WOLLONGONG



Graduation



Research



Teaching

ANNUAL REPORT 1985

THE UNIVERSITY OF WOLLONGONG



Arms of the University

The principal elements incorporated in the arms of the University are the blue of the sea, the gold of the sand and the red of the Illawarra flame tree. The open book often used for educational institutions is also included.

The blazon is: Azure an open book proper bound gold on a chief wavy or three cinquefoils gules

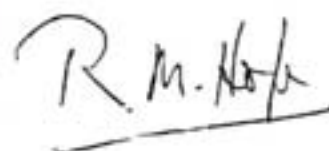
ANNUAL REPORT 1985

THE UNIVERSITY OF WOLLONGONG

The Honourable R.M. Cavalier, M.P., Minister for Education

Dear Minister,

In accordance with section 34 of the University of Wollongong Act 1972, the council of the University has the honour to present to you the Annual Report of the proceedings of the University for the period 1 January to 31 December 1985



Chancellor



Vice-Chancellor

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Secretary

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The year in review



Professor McKinnon

The year 1985 was especially notable for the University as it was our tenth as an autonomous body. To recognise the significance of the anniversary, celebrations were held to signal the culmination of the decade of growth and development. At a special graduation ceremony and anniversary dinner on University Day—August 9—an honorary Doctor of Letters was conferred on the first University Visitor, the former Governor of New South Wales, Sir Roden Cutler, and an honorary Doctor of Science on the distinguished naturalist, Mrs Thistle Stead.

The Council also marked the occasion by creating a new category of award—Fellowship of the University—to be awarded in recognition of outstanding service to the University and the community. The first awards were made to four distinguished supporters of the University, the Deputy Chancellor, Mr Lawrence Kelly, the Lord Mayor, Mr Frank Arkell, the Secretary of the South Coast Labour Council, Mr Mervyn Nixon, and a journalist and

benefactor of the University, Miss Ethel Hayton.

During 1985 the range of offerings, already broadened as a result of the amalgamation, was further added to by the introduction of Bachelor of Applied Science (Human Movement) and the Diploma in Applied Science (Nursing) through the School of Health Sciences. Stage 1 of the new building for the School of Health Sciences, funded by the NSW Government and officially opened by the Minister for Health and Deputy Premier, Mr Ron Mulock, became available for use early in the year.

The University's Technology Centre, which made a strong start in temporary premises, was opened in April by the State Minister for Technology, Mr Eric Bedford. Through the support of the Federal and State governments this Centre fosters technology transfer and development, thus contributing in a practical way to the technological capability of industry and commerce in the region. As a further example of increasing industry-university interaction, the University and Metal Manufactures Limited signed a formal acceptance of one of the jointly funded first Teaching Company Scheme awarded in Australia by the Department of Industry, Technology and Commerce. This first project, negotiated by Uniadvice, envisages research into computer-assisted quality-control monitoring systems. Other building projects made good progress. The new Engineering/Science building was expected to be virtually complete by the end of 1985, while work was begun on a new Administration building and the ring road. Stage 1 of the 'Kooloobong' residential accommodation for 55 students was opened in March, while



Stage 2 of the project was nearing completion at the end of the year. Nevertheless, by the end of the triennium, the university will have only slightly more than half of the space normally provided for universities of equivalent student load, which is a matter for serious concern. During the year staff activities had high priority. Work on the Equal Employment Opportunity Management Plan was completed by the end of the year. In addition a series of well-attended EEO Awareness Seminars, initiated by the new EEO Co-ordinator, Ms K. Rozmeta, was held in the second half of the year. Similarly, safety issues prompted training in steps necessary to create a safe and positive working environment. Staff training was developed through a series of new initiatives taken by the personnel office. Despite poor weather, the Open Day Weekend, held in conjunction with Radio 2WL's Expo, was highly successful, with almost all academic departments and schools participating. An estimated 80,000 members of the public visited the University during this weekend and gained a better appreciation of the University and its service to the community and the university system. Since 1985 was International Youth Year it was pleasing to see an accent on youth in the presentation of displays from many countries in the Pentagon lecture theatre complex. Growth in student numbers has been sustained to the point where the necessity for quotas on enrolments in particular courses and subjects, with resultant restriction of choice, has become a major concern, particularly because of the University's adverse staffing position. Graduate enrolments are, however, not yet at a satisfactory level which will be a matter for continued attention in the future. Having celebrated a decade of

significant growth and development, the University has turned its attention to the years ahead, confident of its developing strengths and looking forward to a period of further initiative and sustained growth.

K. R. McKinnon

Line drawings of campus reproduced courtesy of the University Union



*In pursuit of
knowledge . . .*





Government of the University

PRINCIPAL OFFICERS

Visitor

His Excellency the Governor of New South Wales

Chancellor

The Honourable Mr Justice Robert Marsden Hope, CMG, LLB *Syd.*

Deputy Chancellor

The Honourable Lawrence Borthwick Kelly, MP

Vice-Chancellor

Professor Kenneth Richard McKinnon, A.U.A. *Adel.*, BA BEd *Q'ld.*, EdD *Harv.*, FACE

Deputy Vice-Chancellor (Academic and Research)

Professor Ian W. Chubb, MSc DPhil *Oxf.*
Professor Alexander Marshall Clarke, BA *N.S.W.*,
PhD *A.N.U.*, ASTC, FAPsS (retired 30 June 1985)

Deputy Vice-Chancellor (Services and Development) and Director of the Institute of Advanced Education

Professor Peter Desmond Rousch, BA BEd *Melb.*,
PhD *Wayne State*, FACE, FAIM

University Secretary

Kenneth Eardley Baumber, BSc, *Str And.*
Burton Challice Moldrich, BA *Ceyl.*, Dip Tertiary Ed
N.E. (resigned 20 August 1985)

Council

Elected by the Legislative Council

The Honourable Norman Leo King, MLC

Elected by the Legislative Assembly

The Honourable Lawrence Borthwick Kelly, MP

Ministerial Nominees (until 6 December 1985)

Brian Somerville Gillett, BA DipEd
Colin Denley, LL.B., Solicitor
Pat O'Shane, LL.B. AM
Dr Elizabeth Anne Kernohan, BSc MSc Agr PhD
Syd.
Eleanor Mary Lynch, Solicitor
Graham Roberts
John Forrest Haymen Clark, BMechE *Melb.*,
MAusIMM FIEAust
Colin Patrick Hollis, MP BA *Open*, BSc (Econ) DIA
Land.

Ex Officio

The Chancellor: The Honourable Mr Justice Robert Marsden Hope, CMG LLB *Syd.*

The Vice-Chancellor: Professor Kenneth Richard McKinnon, A.U.A. *Adel.*, BA BEd *Q'ld.*, EdD *Harv.*, FACE

The Deputy Vice-Chancellor, Academic & Research: Professor Alexander Marshall Clarke, BA *N.S.W.*, PhD *A.N.U.*, ASTC FAPsS (retired 30 June 1985)

The Deputy Vice-Chancellor, Academic & Research: Professor Ian W. Chubb, MSc DPhil *Oxf.*

The Deputy Vice-Chancellor, Services & Development: Professor Peter Desmond Rousch, BA BEd *Melb.*, PhD *Wayne State*, FACE FAIM

Elected by the Students of the University

Matthew Chapman (until 20 November 1986)

John Gregory Paul Lee (until 20 November 1985)

Joseli Cesar Munive (until 20 November 1985)

Paul Leo Manning, BEd *Syd.* (until 20 November 1987)

James Whitehead, BSc BMath (until 20 November 1987)

Elected by Convocation

Peter Morgan Curtis, BEc *N.E.* (until 20 November 1986)

James Wilmot Dombroski, BSc *Syd.* (until 20 November 1988)

Alderman Keith W. Phipps, BA DipEd MACE (until 20 November 1987)

Winifred Joyce Mitchell, MA *N.E.*, PhD *N.S.W.* (until 20 November 1988)

Elected by the Full-Time Academic Staff of the University

Two Professorial members

Professor Robert Barry Leal, MA DipEd *Syd.*, PhD *Q'ld.* (until 20 November 1985)

Professor Ronald C. King, BCom BEd *Melb.*, PhD *Monash*, FAPsS (until 20 November 1987)

Professor Murray George Alexander Wilson, MA *N.Z.*, MA *Wis.*, PhD *Melb.* (until 20 December 1988)

Academic Staff Members other than Professors

Alexander John Anderson, MCom *N.S.W.* (until 20 November 1985)

Maxwell John Lowrey, ME *N.S.W.*, PhD ASTC MIEAust MACS (until 20 November 1988)

Dr John R. Panter, BA *Adel.*, PhD *N.S.W.* (until 20 November 1986)

Two members elected by the Institute Academic Staff

William Mowbray, BSc MEd N.S.W. (until 20 November 1988)

Ronald Keith Pretty, MA Syd., AIE Lond. (until 20 November 1987)

Elected by the Full-Time General Staff of the University

Elisabeth Ann Hilton (until 20 November 1985)

Felicity McGregor, BA DipLib. N.S.W., ALAA (until 20 November 1988)

Gary R. Ryan, BCom (until 20 November 1987)

Peter George Wood, BSc DipEd Syd. (until 20 November 1986)

Elected by Members of the Council (until 15 October 1985)

Dr Winifred Joyce Mitchell, MA N.E., PhD N.S.W.

Arthur Charles Osborne

Nancy Una Reynolds, RGN RMN RMCraft

DipNAdmin (NSW College of Nursing)

The Academic Senate

Ex Officio Members

The Honourable Justice Robert M. Hope,
Chancellor

Professor Kenneth R. McKinnon, Vice-Chancellor

Professor Ian W. Chubb, Deputy Vice-Chancellor

Professor Alexander M. Clarke, Deputy Vice-

Chancellor (retired 30 June 1985)

Professor Peter D. Rousch, Deputy Vice-Chancellor

Director of the Institute of Advanced Education

Mr Kenneth E. Baumber, University Secretary

Mr B. Challice Moldrich, University Secretary

(resigned 20 August 1985)

Mr J. Howard Petrie, Librarian

Chairmen of Departments

Professor John B. Ryan, Department of
Accountancy and Legal Studies

Professor A. Duncan Brown, Department of Biology
(retired 30 June 1985)

Dr Anthony J. Hulbert, Department of Biology

Mr C. Robin Horne, Department of Business Policy
and Operations

Professor Leon Kane-Maguire, Department of
Chemistry

Professor Lewis C. Schmidt, Department of Civil &
Mining Engineering

Professor Juris Reinfelds, Department of Computing
Science

Professor Dudley A. S. Jackson, Department of
Economics

Professor Brian H. Smith, Department of Electrical
& Computer Engineering

Doreen M. E. Gillam, Department of English
Language (until June 30)

Dr James M. Wieland, Department of English,
Literature & Drama and of English Language

Professor R. Barry Leal, Department of European
Languages, Deputy Chairman of Senate

Professor Murray G. A. Wilson, Department of
Geography

Professor Alan C. Cook, Department of Geology



*Chancellor of the University,
Mr Justice Hope*

Professor James S. Hagan, Department of History

Professor Ron Johnston, Department of History and
Philosophy of Science

Professor John R. Blake, Department of
Mathematics

Professor Peter Arnold, Department of Mechanical
Engineering

Professor Geoffrey Brinson, Department of
Metallurgy (retired 30 June 1985)

Associate Professor Noel F. Kennon, Department of
Metallurgy

Dr Harry Beran, Department of Philosophy

Professor Peter Fisher, Department of Physics

Associate Professor Linda L. Viney, Department of
Psychology

Professor Stephen C. Hill, Department of Sociology

Chairmen of Faculties

Mr Garry E. Tibbits, Faculty of Commerce

Professor Ronald C. King, Faculty of Education,
Chairman of Senate

Professor Brian H. Smith, Faculty of Engineering

Professor James S. Hagan, Faculty of Humanities

Dr Martin W. Bunder, Faculty of Mathematical
Sciences

Associate Professor Peter D. Bolton, Faculty of
Science

Dr Gerald C. Nanson, Faculty of Social Sciences

Heads of Schools

Professor Edward Cowie, School of Creative Arts

Dr Donald P. Hogan, former School of Education

Dr Michael Hough, School of Industrial &
Administrative Studies

Dr Michael Hough, School of Health Sciences

Heads of Centres

Mr Michael Morrissey, Acting, Centre for
Multicultural Studies

Dr Brian Cambourne, Centre for Studies in Literacy

Elected Members

Academic Staff Elected by and from the Members of Each Faculty

Mr John Steinke, Department of Economics (Faculty of Commerce)

Dr Jennifer M. Jones (Faculty of Education)

Dr Denis Montgomery, Department of Civil and Mining Engineering (Faculty of Engineering)

Dr John A. Schuster, Department of History and Philosophy of Science (Faculty of Humanities)

Dr Gregory Doherty, Department of Mathematics (Faculty of Mathematical Sciences)

Dr Peter G. Burton, Department of Chemistry (Faculty of Science)

Dr Beverley M. Walker, Department of Psychology (Faculty of Social Sciences)

Mr David R. A. Anderson (Faculty of Education)

Mr Michael J. Hatton (Faculty of Education)

Dr Lyn Gow (Faculty of Education)

Mr David B. Stamp (Faculty of Education)

Student Members

Mr Joseli C. Munive

Mr Daniel Delmage

Mr John G. Lee

Ms Nelly F. Munive

Ms Julie Fisher

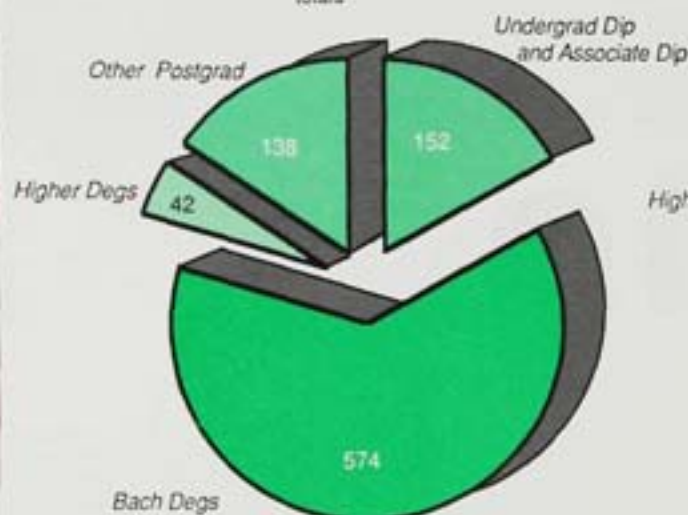




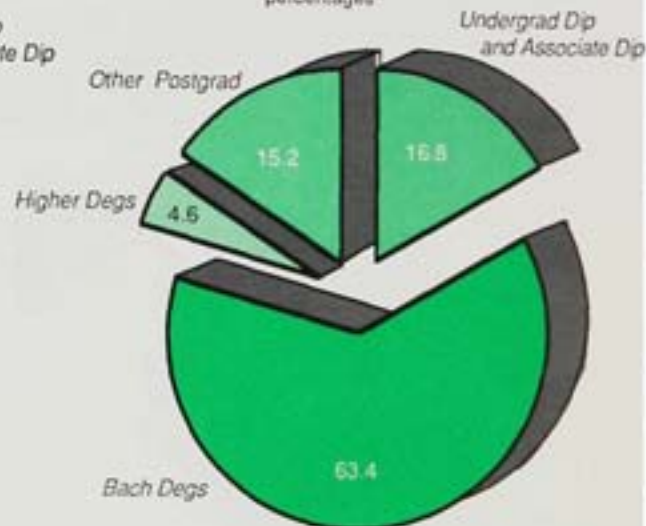
1985

Australian Government Grants Staff and Student Statistics Degrees and Diplomas Awarded

a) Degrees and Diplomas
totals



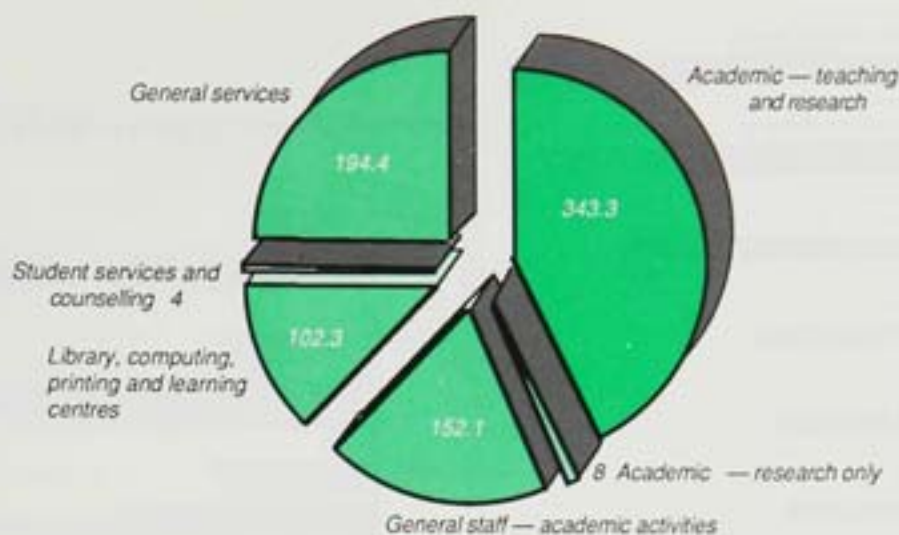
b) Degrees and Diplomas
percentages



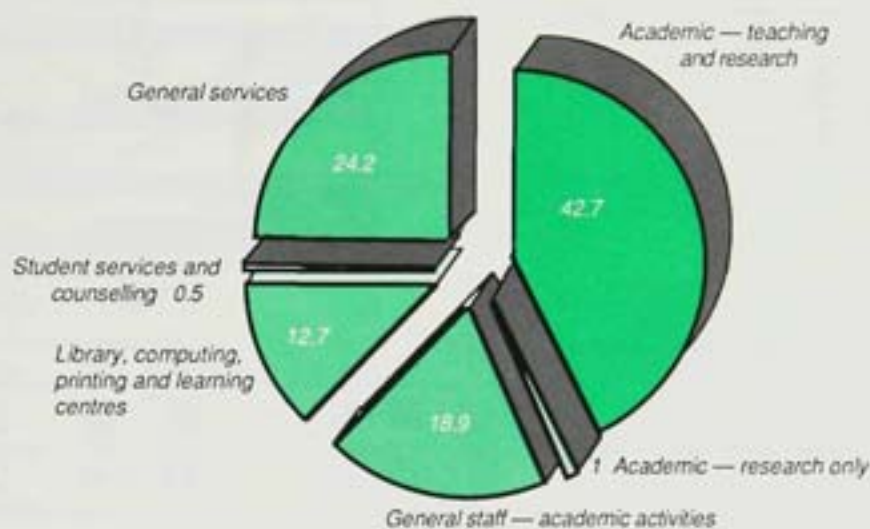
Australian Government Grants



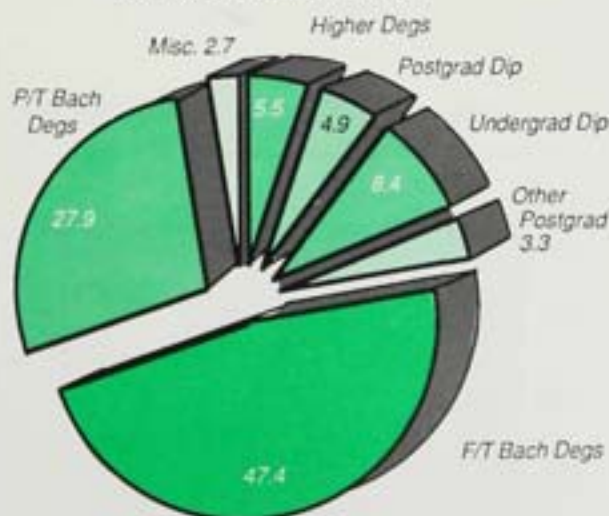
c) Staff Numbers



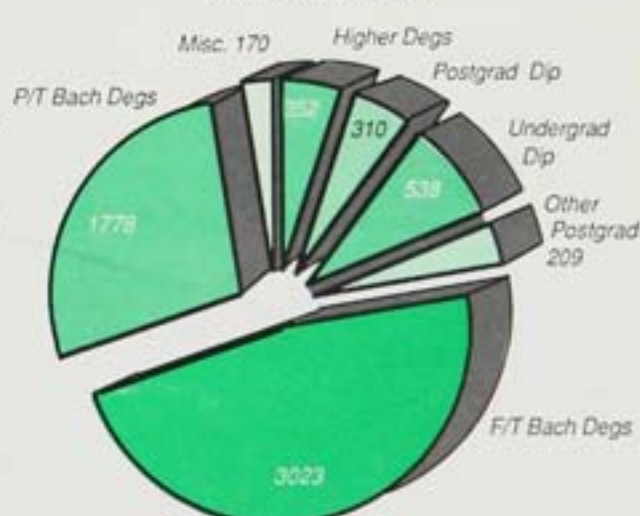
d) Staff percentages



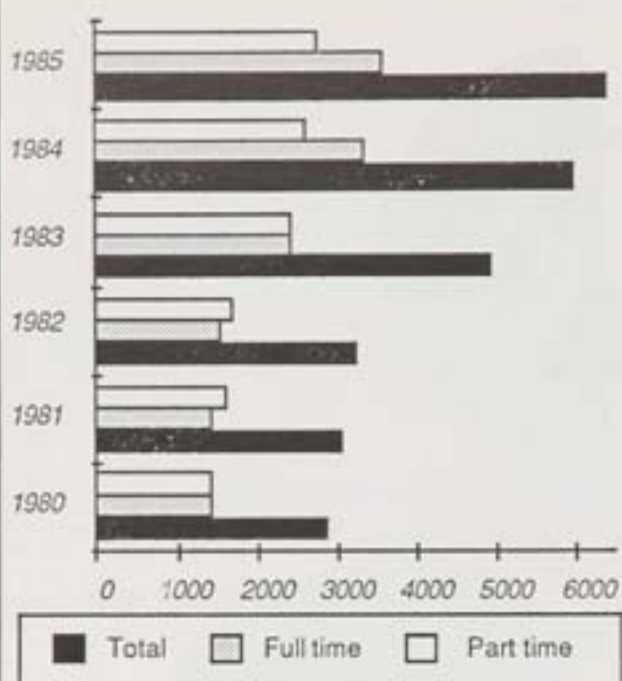
Percentage enrolments 1985



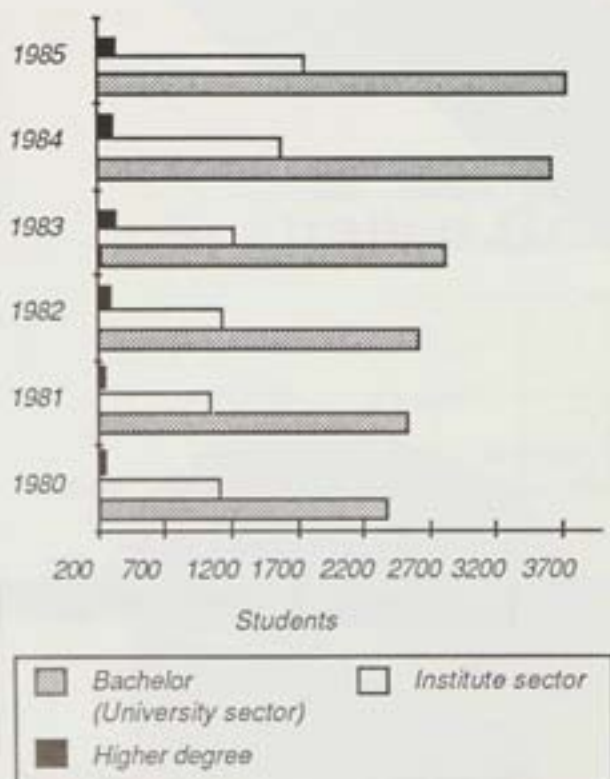
Total enrolments 1985



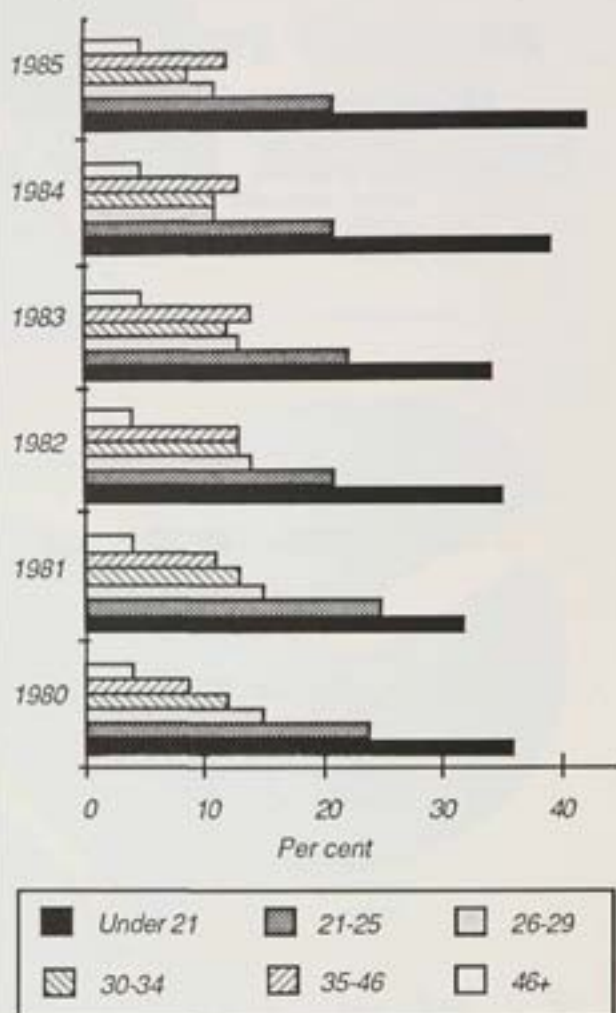
Growth in student population, 1980-85



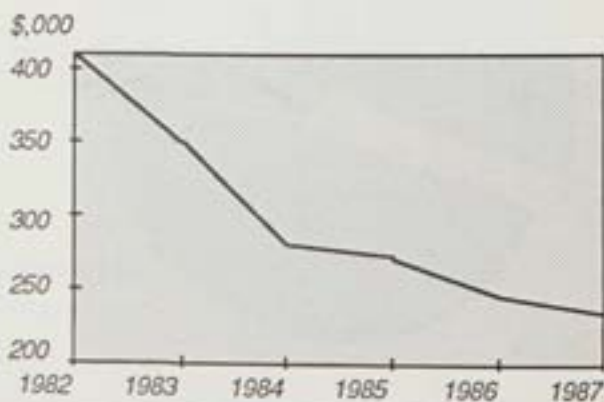
Enrolment by course, 1980-85



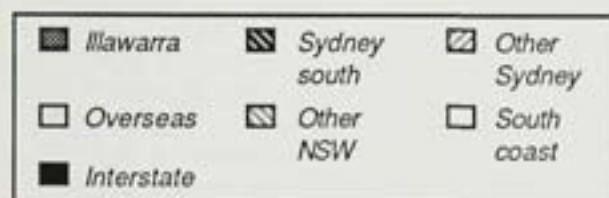
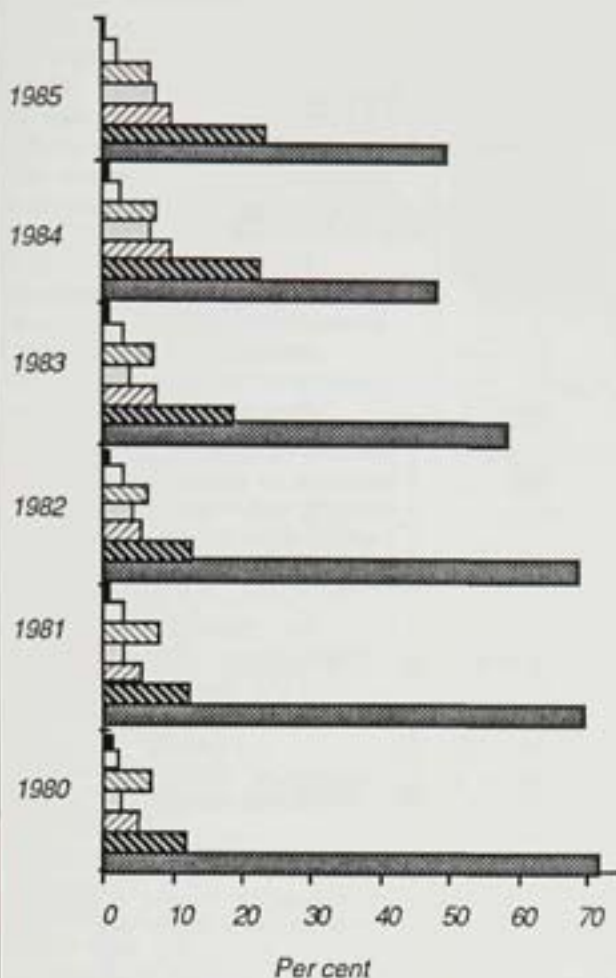
Proportional enrolment by age, 1980-85



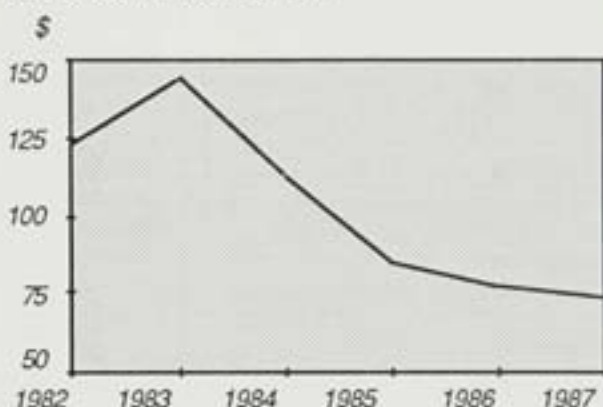
Equipment grant (in real terms) per student load, 1982-87



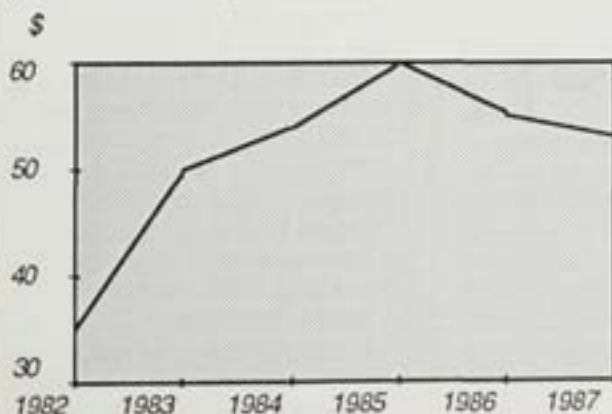
Enrolments by region (proportional)



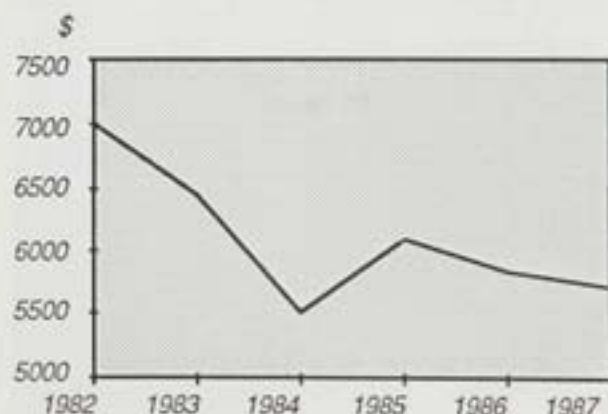
Minor capital works grant (in real terms) per student load, 1982-87



Special research grants (in real terms) per student load, 1982-87



Recurrent grant (in real terms) per student load, 1982-87



REPORTS FROM FACULTIES

Academic activities

Faculty of Commerce

The Faculty of Commerce is responsible for associate diploma, bachelor degree and a full range of postgraduate courses in the areas of commerce and administration. In addition, the Faculty offers Arts degrees in its areas of specialisation, as well as providing service subjects for a number of degrees in the University.

The Faculty is composed of four units—the Department of Accountancy and Legal Studies, the Department of Business Policy and Operations, the Department of Economics (which is responsible for Economics and Industrial Relations) and the School of Industrial Studies (which is responsible for administration and computer applications). There is active and full co-operation between the units in the development and presentation of courses.

The strong demand for student places in the Department of

Accountancy and Legal Studies subjects continued into 1985. This meant that the teaching activities were mainly concentrated on the handling of the record level of student enrolments. The Department, however, managed to offer an important new subject, Anti-Discrimination Law, which attracted 27 students. In view of the growing importance of the topic it seems vital that our students have the opportunity to study in this area.

At the suggestion of the Department, the University Council set up a committee to examine the future development of Legal Studies education.

At the postgraduate level, the Department developed a new subject in Empirical Research Methods in Accounting for introduction in 1986. During the year three senior members of staff co-operated in writing a textbook on Auditing.

The Department held nine staff seminars on a variety of topics,

primarily to allow staff to obtain feedback on papers before finalising them for publication. The seminars were open to all staff and students.

The Department of Business Policy and Operations has a staff of five lecturers carrying out teaching and research in the areas of business finance, marketing and general management, including organisational behaviour and corporate strategy.

The Department offers undergraduate courses of study in management within the Faculty of Commerce. The Department also offers two postgraduate qualifications in management: the Master of Management degree and the Diploma of Management.

The demand for courses offered by the Department is high. The postgraduate courses especially have obviously tapped a ready market, as may be gauged from the fact that in 1985 there were 76 qualified applicants for the 40 places available.

Continued liaison with private and public organisations, especially in the Illawarra area, ensures the continuing relevance of the courses offered.

New subjects offered by the Department in 1985 included a course in Product Management for postgraduate students in marketing, and an undergraduate course in consumer behaviour. Planning in 1985 has resulted in a scheme to offer three new subjects in 1986—Capital Markets, Marketing Communications and New Technology Enterprise. Each of these subjects is designed to



*Professor J. B. Ryan,
Chairman of the
Department of
Accountancy and
Legal Studies*

meet an established demand. The New Technology Enterprise will be taught in co-operation with the Illawarra Technology Centre.

In 1985 the Department of Economics successfully expanded the courses in econometrics and mathematical economics with new 200-level subjects, Econometrics, taken by 28 students, and Mathematical Economics, taken by 41 students. The new subject, Monetary Economics, attracted 20 students, and the revised, advanced subject, Input-Output Analysis, nine students.

With one additional lecturer and one prospective teaching fellow, and growing student demand, the Department in 1985 initiated a substantial increase in its Industrial Relations program for 1986. These new subjects were introduced and have been approved: Employers and Industrial Relations; Honours Industrial Relations; and Industrial Relations Policy.

Of particular significance is the introduction of Honours Industrial Relations. It is hoped that within a few years the Honours program will be retaining some of the better students.

In view of the advent of the School of Nursing, and growing public interest, the Department introduced in 1985 a new subject for 1986: Economics of Health Care.

The Department continued an active seminar program. Fifteen seminars were given by outside speakers during the year, plus the Inaugural Sir Richard Kirby Lecture in Industrial Relations, entitled Economics and Industrial Relations, delivered by Professor Keith Hancock, Vice-Chancellor of Flinders University and Chairman of the Committee of Review into Australian Industrial Relations Law and Systems.

The School of Industrial and Administrative Studies is a relatively new unit, and one which joined the Faculty at the time of the amalgamation of the University and the Institute of Advanced Education. These two circumstances have meant that the School has been very active in the development and implementation of new programs.



Welcome new member to the Faculty of Education in 1985 was Professor Carla Fasano

In the computer applications area the School has assumed responsibility for computer applications subjects in the Bachelor of Commerce. These subjects became compulsory for all Bachelor of Commerce students starting their degree from 1985 onwards. The School has also developed a new specialisation in the Bachelor of Commerce in Business Systems Analysis.

The School has developed an Associate Diploma in Administration with specialisation in Waste Control and Computing and implemented a Postgraduate Diploma in Occupational Health and Safety.

The School is also responsible for the University's microcomputer laboratories which are available for use by all sections of the University. Members of staff have been active in consultancy and in conducting computer awareness courses for senior executives.

Faculty of Education

A major feature of the 1985 academic year has been the consolidation of the structure of the Faculty of Education. The physical relocation of many members of staff to a more centralised position has provided a better basis for co-ordinating academic and research activities which had existed separately before the Faculty was established.

The three Program Committees have been consolidated within the ambit of the Faculty Planning Committee in order to streamline both the planning and administration of program policies.

A new system of allocating housekeeping funds has enabled the continued development of centres of academic focus. These are:

- The Centre for Literacy, Language and Cognition,
- The Centre for Education Policy Studies (incorporating the Unit for Special Education),
- The Centre for Curriculum Theory and Teacher Development,
- and
- The Centre for Health Promotion and Lifestyle Management.

The Centre for Literacy, Language and Cognition has been formed by an amalgamation of the former Centre for Studies in Literacy and the Centre for Language and Cognition. The staff involved in these centres have established close contacts with schools, with the community and with fields of research in their areas of expertise.

The arrival of Professor Carla Fasano in July brought a new dimension to the Faculty. In particular, her brief is to bring new directions to research and development. Professor Fasano will take charge of the introduction of PhD courses designed for top-level administrators in the NSW Department of Education. Further expansion of the Faculty is guaranteed through a third professorial appointment, advertised late in 1985 and to be filled in 1986.

Among other staffing matters, Professor Mel Lang of the University of Hawaii and Mr Vic Forrest, W.A.I.T. Consultant and Adviser on Aboriginal Education Curriculum, visited during First Session. Eileen Adams, Lecturer in Postgraduate Studies at the London Royal College of Arts, generated a great deal of interest in the UK Schools Council project, Art in the Built



Favourite spot for breaks between lectures is the duckpond, located close to the Union and Library

Environment. In Second Session, Professor Dennis Hunt of the University of Saskatchewan contributed to the academic activities of Faculty. Mr Neil Hall was appointed Senior Lecturer in the area of Computers in Education. Ms Jan Turbill was appointed a Lecturer in the language area and Mr Abdul Monaem joined the lecturing staff in the area of Health Sciences. Mrs Jane Cook took up duties as Professional Officer in the early part of the year. Ted Booth was awarded the EdD from the University of Hawaii. Jane Cook was awarded a Graduate Diploma in Educational Studies (Computers in Education), University of Wollongong. Dr Lyn Gow and Mr Michael Hatton were promoted to Senior Lecturer. Mr Kevin Rigby, who had been a member of staff in the Science area since the early days of the original Teachers' College, retired in July. Dr Ken Davies retired at the end of December.

Dr Don Hogan, Deputy Chairman of the Faculty, retired in December. Dr Hogan, who had been Head of School of the pre-existing School of Education, was one of the key individuals in the

successful establishment of a Faculty of Education. His departure from the University signals the end of an important era in higher education in Wollongong.

A major redevelopment of the BEd (Primary) program is now in progress. The Advisory Committee now has a proposed schema to the stage of acceptance in principle by Faculty. The detailed writing up and submission stage is expected to be completed and the program ready for implementation in 1987. Mr Malcolm Harris and Mr Don Asquith travelled overseas, investigating aspects of developments in primary education programs in a number of universities.

Dr Tony Fielding received the Meritorious Award for the Systems Research Foundation in recognition of outstanding work in the field of education in general and in the area of systematic personality modelling in particular.

Mr Arthur Smith has been invited as a Consultant to the joint Aboriginal Education Consultative Group and NSW Higher Education Board survey to assess effectiveness of Aboriginal student support and study facilities in tertiary education institutions.

Papers presented in 1985 included those by Professor Fasano to ANZAAS and to the Participation in Tertiary Education Conference; by Dr Lyn Gow to the 7th World Congress in the Scientific Study of Mental Deficiency in New Delhi; by Dr Noeline Kyle to the ANZ History of Education Conference; by Mr Brian Rogers to the South Pacific Association of Teacher Educators, and by Professor King to the Australian College of Education Conference in North Queensland and the Illawarra Summit Conference.

The faculty is attracting the higher-scoring students and is coping with the requirements to stay within quotas. The University of Wollongong surveys of students who undertook the 1983 and 1984 HSC in Sydney Metropolitan schools reveal that the proportion of high-scoring students enrolling in Education is among the highest in the University.

Computer awareness courses continued to be offered as part of the South Coast Region's in-service program for teachers and courses were also offered for school children during school holiday periods.

In summary, the 1985 academic year was both challenging and productive. Changing demands have been foreseen and adjustments made to meet those demands while commitment to previous undertakings has been maintained.



Theme of the Faculty of Engineering's 1985 Creative Design Competition was International Youth Year. Seen here with the winning designs are, from left, Rob Lloyd (senior Training Officer Apprentice Fitting and Turning Shop), Jan Bofeldt, Gary Koks, Albert Cassar, David Morgan, Simon Moran and Greg Morris. Kneeling, left to right, Ross Robinson (Manager Engineering, BHP Steel International - Slab and Plate Products), Martino Cocca, Scott Kendell, Bruce Chapple and Wendy Hird (on bicycle)

Faculty of Engineering

The Faculty of Engineering comprises four departments:

- Civil and Mining Engineering
- Electrical and Computer Engineering
- Mechanical Engineering
- Metallurgy.

The year 1985 saw the introduction of two new five-year courses leading to the joint degree BCom/BE in each of Civil Engineering and Mining Engineering with Management Studies. These are in addition to a new five-year BE program which combines studies in both Civil and Mining Engineering. Another major academic activity concerned the final development of a four-year course in Materials Engineering leading to a BE degree. The course, to be implemented in 1986, is designed to meet the requirements of the professional institutions and has so far gained provisional acceptance for a period of two years with the Institute of Metals and Materials of Australasia. Upon the introduction of this course, the name of the Department will be changed from Metallurgy to Metallurgy and Materials Engineering.

A range of new fourth-year elective subjects was introduced by the Departments of Electrical and Computer Engineering and Mechanical Engineering. Those offered during 1985 included: Electronics and Computers, Robotics, Electric Energy Systems and Solar Energy. Arrangements were also made to have a first-year subject, Engineering Processes and Practice, taught by the Department of Technical and Further Education in its own workshops so that first-year Mechanical Engineering students gain first-hand practical experience. Because of wide variations in experience and capability of first-year students in the areas of engineering drawing and computers, serious consideration is being given to the possibilities of providing a range of streams in each of these areas.

Engineering and computer-aided engineering design are areas of great importance, with rapid development occurring in the latter within all areas of engineering. The theme for the 1985 Annual Creative Design Competition for first-year students was International Youth Year. Once again second-year design groups competed against groups

from the universities of Sydney, New South Wales and Newcastle and the NSW Institute of Technology in a creative design competition organised by the Sydney Division of the Institution of Engineers, Australia. The ability of the Faculty to mount formal computer-aided design courses in all areas has been enhanced considerably by the purchase of Apollo terminals and mass storages as well as quality colour plotters, printers, and a number of compatible personal computers, all linked to the central University computer.

Dr P. C. Arnold was appointed to the Chair of Mechanical Engineering and as Chairman of the Department in January. After the retirement of Professor Brinson at the end of 1984, Associate Professor N. F. Kennon became Chairman of the Department of Metallurgy. Seven additional academic and two additional support staff positions were made available to the Faculty this year. As a consequence of these positions and a number arising as a result of resignations, there has been an opportunity to strengthen certain areas of teaching and research activity. In particular, a new position of Professor of

Computer Engineering has been established and advertised for filling in 1986.

Because of the rapid increase in the total Faculty of Engineering student load, which had doubled in the years from 1980 to 1984 without a commensurate increase in staff, equipment or space, lower quotas were imposed in 1985 than in 1984. Completion of the new Engineering/Science Building project will provide an increase of about 30 per cent in total space available for Engineering during 1986. This, together with a slow but steady increase in staff numbers, will enable some increase in the quota for 1986.

As a result of formal agreements between the University of Wollongong and a number of Chinese universities three of the Departmental Chairmen and five other members of the Faculty visited China to deliver a series of lectures and establish collaborative research activities. In return, there have been numerous short-term visits, some relatively long-term appointments and eight post-graduates to the Faculty from China.

Faculty of Humanities

In 1985, the Faculty consisted of the same academic departments as in the previous year—English Language, English Literature and Drama, European Languages, History, History and Philosophy of Science, and Philosophy. The Faculty acquired responsibility for

the administration of General Studies from the beginning of the year, and continued to develop courses in the new discipline of Politics with the help of the Board of Political Studies. Departments of the Faculty were for the first time required to impose quotas on the entry of students. Enrolments into the B.A. degree were restricted by raising by some 25 points the Higher School Certificate score necessary for entry. Within the Faculty, however, individual departments did not set quotas, and sufficient places were available in each subject for students' choice not to be significantly more restricted than in previous years. Departments were allotted part-time teaching funds largely according to the need created by the pattern of enrolments. The decision to free up internal funding by allowing transfer between housekeeping and part-time teaching allocations proved of immense benefit. It made possible the maintenance of something like the same standards of teaching, even though student:staff ratios within the Faculty continued to rise.

A major in Political Studies was introduced in 1984 and consolidated this year with the introduction of two new subjects: Advanced Australian Politics and Theories of Socialism. The major in Political Studies now consists of a core of compulsory subjects and optional subjects to be chosen from five strands: political

theory, comparative politics, industrial relations, power policy and technology, and political sociology.

The Faculty has put on record its appreciation of the work done by the Board, but recognises (as did the Board itself) that it had reached the limit of its achievement. Accordingly, the Faculty commissioned Professor Henry Mayer, late of the Department of Government, the University of Sydney, to advise on further developments of Politics as a discipline. Professor Mayer reported in September; his report awaits implementation.

Professor Mayer was one of the distinguished visitors who in 1985 came to the University as a guest of Faculty. Others were Dr Kay Daniels, of the Committee Inquiry into Australian Studies; Dr V. David, of the Parliament of Malaysia; and Mr Mal Bryce, the Deputy Premier of Western Australia. Each gave a seminar which members of staff in all Faculties attended.

Several distinguished academic guests were prevented from visiting. In July, the University, through the Department of History, was to have hosted a conference of historians and political scientists on the problems of Vietnam in the twentieth century. The simultaneous booking of University premises by partisan Vietnamese groups caused the organisers to consult the Police, who could not guarantee the safety of the participants. The organisers reluctantly cancelled the conference; the Department of History will sponsor the publication of the papers that were to have been given.

Faculty of Mathematical Sciences

The year 1985 was significant for the Department of Computing Science. The department granted its first PhD degree—to Mr Phillip McKerrow for his work entitled, *Computer Systems Performance and Measurement: Theory and Practice*. The second event was the winning of the best undergraduate computer project in all Australia by Mr Paul Bunn. Mr Bunn's project was the

Lecturer and student in the Department of Computing Science, Faculty of Mathematical Sciences



design of a microcomputer chip. The complexity of the chip required special manufacturing technology. It was the second largest chip ever manufactured in Australia. Both events substantiate the growing reputation of the department. The academic activities of the department consisted of the presentation of seminars, the presentation of papers and talks at professional meetings and development of the curricula. The content of the presentations indicated the breadth of the interests of the Faculty. Some of the topics were software engineering, local area networks, operating systems, theoretical computer science, data base technology and artificial intelligence. Members of the staff also served as referees for various scientific and technical journals. The direction of MSc, Honours and Diploma students occupied a significant portion of staff effort as there were more than ten such student projects. Faculty received research grants in such diverse fields as data base design and development, the development of software for networks and speech recognition for the Chinese language. The staff continued to develop new software to enable the integration of the latest micro chips with the present laboratory equipment. Several faculty and staff participated in and attended conferences and workshops devoted to current computer technologies. Since many developments in computing originate in industrial and government laboratories, the participation by departmental staff in such conferences and workshops has been of great value to both students and staff. As usual, the end-of-year enrolments were significantly higher than in previous years, indicating that student interest in computing science continues to increase. Indications are that this interest will remain high. Our graduates continue to be much sought after by both industrial and government employers. All graduates are employed in positions suitable for their training.

In 1985 the Department of



During Careers Market Days, advice is proffered by Mr Rodney Hollands of the School of Creative Arts

Mathematics continued to have big first-year classes, and also felt the flow-on effect in second year from the abnormally large first-year numbers in 1984. The sizes of the classes had been forecast more accurately for 1985 so that it was possible to plan the distribution of lecture times and student attendance to avoid overcrowding. A notable rationalisation in first year was the return of Engineering students to the annual first-year subject, Mathematics IA, instead of the two half-year subjects. The increase in student numbers, together with a resignation, led to the appointment of four new staff members: one Pure Mathematician, one Applied Mathematician and two Statisticians. The broadening of research activities and teaching areas has been welcomed. It is anticipated that new subject offerings will soon become available.

The number of students specialising in Mathematics seemed to be again increasing, following a trend in recent years towards Computer Science. Nevertheless, within the Faculty of Mathematical Sciences, many students are specialising in both Mathematics and Computing Science with the two disciplines complementing one another in many ways. Other than the basic subjects of first and second year, mathematics topics which have been particularly favoured in these combinations include Computer Graphics, Operations Research, Logic, Statistics and Numerical Analysis. Students

with such double specialisations seem to have no trouble in finding employment.

In the honours and post-graduate area the recent wave of students has almost passed through the system, but the emergence of a new group from the large intakes of recent years is anticipated. In 1985, four PhDs were completed, following one in 1984, two in 1983, and two in 1982.

Contact with local schools has continued during the year. The Talented High School Program, involving monthly visits to the University by local school students and culminating in an annual mathematics competition, is still proving popular. A full day program for Years 7, 8 was held in July. On two days in August the Department was represented at Careers Market Days at Beaton Park, organised by South Coast Schools Careers Advisers.

Faculty of Science

During 1985 the Faculty of Science experienced a sizeable expansion, with the entry into the Faculty of the School of Health Sciences, consisting of the two sections: Nursing Education and Human Movement Science.

As part of the Nursing Foundation Studies, a new 16 credit point course, Biological Sciences, was offered for the first time. This was a joint effort from three of the Science Departments: Biology, Chemistry and Physics. In spite of initial difficulties, the course appears to be achieving its objectives and is



Chairman of the Department of Chemistry is Professor Leon Kane-Maguire. Teaching developments in the Department included two new 100-level courses—one for nurses and another designed specifically for engineers

a testimony to the excellent inter-departmental co-operation characteristic of this Faculty.

The Faculty Chairman (Associate Professor P. D. Bolton) attended the first-ever National Conference of Deans in Science in Canberra in April. Every University in Australia was represented and much useful information was gathered and exchanged. A further meeting was arranged for November which all the appropriate Federal Ministers would attend to discuss the many problems concerned with teaching and research in the Science Faculties in Australia. In February, the Review Committee handed in its report on the first ten years of operation in the Department of Biology. It found the Department to be

functioning effectively and efficiently and made a number of recommendations which are being implemented. In June, the foundation Professor of Biology, Professor A. D. Brown, retired. Professor Brown was largely responsible for the direction in which the Department of Biology evolved and thus its success. His academic leadership will be missed.

In 1985 student enrolment increased to a record high level with a 25 per cent increase over 1984 figures. Thus, over the past two years student numbers have almost doubled (91 per cent increase). In 1985, the increase was largely, but not wholly, due to the introduction of Nurse Education to the University.

Two of the new academic

appointments in Biology were in areas previously not covered by the Department and thus during 1985 preparation was put in hand for two new 1986 subjects.

These will be Microbiology and Immunology, and Genetics. Because the Geneticist appointed (Dr D. J. Ayre) works with marine organisms, the Department can now supervise student research projects in certain areas of marine biology.

In the Department of Chemistry the overall student load was slightly higher than in 1984. Major changes in the first-year enrolments patterns involved a sharp drop in the Engineering intake and the enrolments of 95 nurses in the Biological Sciences I & II as part of the new Diploma in Applied Science (Nursing) course. A substantial rise (ten per cent) also occurred in Science enrolments in 100-level.

A very significant feature was the 76 per cent increase in students taking 200-level Chemistry subjects. A small rise occurred in 300-level enrolments, while four students started in Chemistry Honours programs. There was a small drop in postgraduate enrolments.

Teaching developments included the introduction of two new 100-level courses—that for nurses mentioned earlier, and Chemistry



Inauguration of the physics component of the Nursing foundation Studies resulted in a record enrolment of students in the Department of Physics, some of whom are seen here in a lecture theatre

103—a course specifically designed for Engineers. A co-ordinated reassessment was undertaken of all undergraduate Chemistry subjects. Among the major modifications agreed for introduction in 1986 was a new 300-level subject covering areas of Biological Chemistry.

Four new academic staff joined the Department in 1985, including two replacements for retiring members. These particularly strengthened the Department's capacity in Analytical Chemistry and Biochemistry.

Student enrolments in the Department of Geology were at a record high with numbers in first-year remaining roughly constant but significant increases occurring in second-, third- and Honours-year. The number of postgraduate students increased as well.

The inauguration of the physics component of the Nursing foundation Studies resulted in a record enrolment of students. The number of physics majors remained about the same. This number is low not only at Wollongong but at many other Australian universities and should be viewed as a national crisis.

This is the initial year of teaching of the School of Health Sciences in its present form and there were adequate intake levels into the Diploma of Applied Science (Nursing); quotas were applied into the Diploma and Degree level courses of Human Movement/Sports Science. Both areas of the School have been primarily engaged in the development of their respective teaching programs.


In the Nurse Education area five new staff were appointed in 1985 and their main efforts have been directed towards the occupation and official opening of a new 'Stage 1' building for Nursing Education, the development of working relationships with a wide range of health facilities in the region, and the teaching of the initial year of the course.

The Human Movement/Sports Science area has been very active in regionally based developmental programs, such as the establishment of an Illawarra Region Sports Institute, and a

Better Life project to improve health fitness and quality of life in the Illawarra region.

Faculty of Social Sciences

Two new Professors were appointed to the faculty in 1985, Professor W. Lovegrove to the Department of Psychology, and Professor S. Castles to the Centre for Multicultural Studies. They take up their posts early in 1986. In 1985 the Department of Geography maintained the pattern of growth and development established in previous years. Seven MA students were graduated (the largest number of postgraduate degrees awarded in any single year since the Department's foundation); pleasingly high levels of student satisfaction with the teaching performance of the department were recorded in most subjects; most staff had work accepted for publication in reputable journals; significant external research grants were attracted to the Department; and links with government, industry and private organisations were expanded. The intake of first-year students was slightly smaller than in 1984. But the higher HSC cut-off for admission to the Arts degree, together with further attention to departmental teaching and assessment practices resulting from the extensive evaluative studies conducted in 1984 by the Centre for Teaching Development, were reflected in higher levels of student enthusiasm, satisfaction and performance, characteristics



Metabolic characteristics of reptiles and mammals are the subject of evaluation in the Department of Biology (picture courtesy Uniadvice).

we shall endeavour to capitalise in future. In later undergraduate years increasing student numbers stemmed particularly from the flow-on of larger cohorts of Environmental Science and Engineering students, to the point that we can now claim to draw significant proportions of our student load from each of several faculties. The effects of this mix of student backgrounds are, for the most part, regarded as beneficial all round.

The Department has continued to produce source material for HSC Geography students, to sponsor seminars/lectures by distinguished visitors and to serve the community at large by such means as its responsibility for the official Meteorological Bureau weather recording station. During 1985 the Psychology Department continued to fulfil the aims of its teaching program. At postgraduate level training is provided for professional psychologists as well as research/academic psychologists. The aims of the undergraduate program include providing a broad introduction to the discipline of psychology, encouraging specialisation in selected areas of psychology, while developing research skills as well as developing a student's capacity to analyse critically, synthesise and integrate. Students at the undergraduate level are able to select from subjects in the areas of Development, Research Methods



Left: The Department of Geography's Dr Ross Robinson, whose area of specialisation is Transport Policy Analysis. Above is Ms Rebecca Albury, Lecturer in the Department of Sociology

and Statistics, Learning and Memory, Psychological Assessment, Applied Psychology, Social Psychology, Humanistic Psychology, Experimental Psychology, Consciousness, Psychophysiology, Psycholinguistics and Communication and Behaviour in Organisations.

Also in the Department of Sociology is Mr Mike Donaldson



At the postgraduate level, the teaching program further develops the undergraduate aims. More specifically, the program providing training for professional psychologists—MA (Hons) in Applied Psychology—aims at providing students with the knowledge and skills necessary for their acceptance in the community as professional psychologists.

The Department of Psychology began teaching nursing students for the first time with support of special funds from the state government.

The Department of Sociology intake to the first year program was lower than 1984, in line with a generally reduced enrolment in Arts subjects. The Department settled into a stable core program of theory and method courses at an undergraduate level, so there were no changes in the basic teaching program. With a broad theoretical grasp of social issues, as well as methodological competence, the Department's graduates have enjoyed good job prospects on graduation. While

new specialist courses have been developed for 1986 (on the environment, health and illness, and crime and justice), the key new teaching emphasis in 1985 was within the post-graduate program. Here, the Department has drawn postgraduate students into a closer learning relationship with one another as well as into closer general support and review by staff through new seminar programs and review procedures. As a Sociology Department, staff are involved in a range of wider activities that relate the University to the community. Members of the Department have been involved as individuals in a variety of ways: one has been extensively involved in Special Broadcasting Service Media work as a board member and acting chairman, as well as being consultant on multicultural issues to various bodies of the Australian Government; another staff member has been consultant on the social aspects of reproductive technology to the Commission on the Status of Women, the Australian Council of

Churches and other groups; and one member has acted as consultant to the Economic and Social Commission for Asia and the Pacific (ESCAP), The Foundation for International Training (Canada) and the Australian Government, on science and technology policy; and has been involved in international missions on technology and under-development through Asia and the Pacific region.

Several members have been on editorial panels of international or Australian professional journals in the discipline. Two have been directly involved in the development and implementation of the new school HSC curriculum, 'Society and Culture'. More senior members of the Department are also involved in University administration activities as, for example, Chairperson of Faculty, Director of the Centre for Technology and Social Change, and as members on a number of Senate Committees, such as Undergraduate Studies.

Dr R. Whitton resigned as Head of the Centre for Multicultural Studies in January and Mr M. Morrissey became Acting Head.

School of Creative Arts

The Bachelor of Creative Arts program moved into its second full year at the beginning of 1985. The number of students increased to 236, including nine postgraduates.

There was a sharp rise in the number of applicants for the courses, rising from some 300 for first, second, third choices in 1983, to almost 2,000 in 1984. Candidates were admitted for Bachelor of Creative Arts, Associate Diplomas, MA(Hons), PhD and three for the newly validated Master of Creative Arts program (MCA). At the time of writing this report, no candidates have been admitted to the Doctorate in Creative Arts (DCA), though the first recipient of the DCA Honoris Causa was the distinguished Australian composer, John Antil, who received the Award in May 1985. The year has been one in which the School of Creative Arts has sought to strengthen and focus

its attention upon one of the innovative and most potentially invigorating of its concepts — that of Arts Fusion. A very high standard of presentation was achieved in the central History of Arts lectures, and the complementary Arts Theory lectures.

The Inter Arts projects have been numerous and, increasingly, film, video, and other audio-visual archives have been established to create a strong, critical tool with which to measure achievement.

Fine Arts have achieved great steps forward, no doubt helped by the new studios (Ceramics/Painting and Sculpture). These studios, while rather cramped, are well equipped, and all walls are lined so that students may hang work at all times to gain continuous criticism from colleagues and staff. The Long Gallery (opened in August 1984) has also proved to be a powerful tool in setting up a professional and critical atmosphere for students. Exhibitions are changed on a five-weekly basis, and students in the 1st/2nd Years mounted in the closing weeks of term an exhibition of their works, many of which have been sold to the public.

Paintings are of a high standard, and swing healthily between total abstraction and realism. The discipline of life and perspective drawing is pursued rigorously, and this too has had excellent effects on printmaking. Printmaking studios are equipped for a range of techniques, and the SCA has been lucky in acquiring some very good machines for large-scale works.

Sculpture opened in a new studio in 1985, with a large open-air sculpture park adjoining. Under the leadership of Bert Flugelman many good works have been made in wood, marble, steel, ceramics, clay, and plastics. The SCA has also gained some good equipment either as a result of donation, or inexpensive deals through Patrons' scheme projects.

Textiles have also gained an excellent studio (double size), which is well equipped with looms and other textile



First recipient of an Honorary Degree of Doctor of Creative Arts, from the School of Creative Arts, was the distinguished composer Mr John Antil. He is seen here in company with the University Vice-Chancellor, Professor Ken McKinnon, and the University Chancellor, Mr Justice Hope

machinery. Once again, there has been a healthy swing between conventional weaving activities and sculptural projects in weaving, embroidery and lace work.

Ceramics was perhaps the worst off. The kilns are primitive, and not located close to the two demountables in which wheels and tables are located. This situation should be partly rectified in 1986, when the first stage of the new studios is completed.

Wild-life illustration runs as a related study, but has reached into photography, printmaking and drawing. The results are good, and at least two students have achieved professional standards; and have gained commissions for illustrative works in textbooks on Australian flora and fauna.

It was decided that the acquisition of a major PNG archives would enable the School to run an Arts Anthropology course. This has spread into work in many media which have been inspired by PNG art.



Versatile musician, Music Development Officer, is Mr David Vance, whose work spreads beyond the bounds of the University campus. Here he conducts a concert in Wollongong Town Hall

Music, too, is alive and well, with regular concerts by soloists, and significant concerts by SCAW Ensemble (contemporary music), the Renaissance Ensemble, and the SCA Big Band (jazz). Studies range through solo, chamber and orchestral repertoire, always backed up by advanced-analysis seminars. Composers have responded well, and many performances of new works have been undertaken by the ensembles.

Theatre suffers from lack of space. In spite of this, four major productions were mounted in 1985, ranging from plays written in the 17th century to modern plays. Workshops and read-throughs are frequent, and plans are developed for the construction of a new facility for 1986.

Creative Writing began as a major course in 1985, and many good poems, items of prose and works for the stage have been submitted, performed and published in the SCA literary and critical magazine *SCARP*, which is now approaching its seventh edition.

The SCA had many distinguished visitors during the year, including

experts in Direction/Musical criticism/
painters/film makers/poets and
Arts theoreticians.
Post-graduate research is being
undertaken in:

Printmaking/Renaissance
recorder music/piano music of
Liszt/Study of the Prelude in
Musical literature/Ware Art/
Papua New Guinea Arts/
Composition/Land Voice.

Centre for Studies in Literacy

In 1985 the Centre for Studies in Literacy amalgamated with the Centre for Language and Cognition, thus becoming part of the Faculty of Education. This new unit is a bigger base from which to carry out research into matters pertaining to Literacy, Language Learning, and Cognition.

The MStudEd degree course attracted increased interest from practising teachers, and enrolments continue to grow. Research findings generated in 1983, 1984 filtered through to all courses at both undergraduate and post-graduate levels. The South Australian CAE negotiated with The University of Wollongong to use its Masters programs for staff seeking higher qualifications in the literacy area. The Centre continued to offer remedial assistance to the University's student population. Students whose first language is not English made increased use of the classes and resources available. Students with writing problems also made use of available services. Some spectacular results were achieved.

A new form of remedial help was offered—eight adults with severe literacy problems were offered remedial help by MStudEd students during session 2. The results were good.

Staff and associates of the Centre delivered research papers at the following National and International Conferences during 1985:

Australian Reading Conference,
Brisbane
Australian Applied Linguistic
Association Conference,
Brisbane

New Zealand National Reading
Conference
Early Years in Childhood
Conference, Perth
National Adult Literacy
Conference.

Centre for Teaching Development

In 1985 the Centre conducted—for the first time—an extensive one-day induction program for all new members of the academic staff. During the program, which was offered twice during the year, new staff met key administrators and there ensued a session-long course of teaching development workshops. The program will be evaluated, and it is expected that it will be expanded in 1986.

Enrolments in the Centre's annual program of workshops and seminars, open to all members of the academic staff, remained high. It was estimated that, by the end of 1985, about 25 per cent of the academic staff would have attended sessions in the program. It is understood that this participation rate is well above average for institutions of higher education.

For the first time this year, visitors from institutions outside the University were invited to lead workshops and seminars. Further assistance was obtained from units within the University such as the Library, Computer Centre, Counselling Centre and the School of Industrial and Administrative Studies.

Evaluation of subjects and teaching have now been conducted for four years. Developments over the past two years include the growing participation of engineering academics in the evaluation program, a series of evaluations in one Department which may lead to extensive curriculum redevelopments and repeat evaluations which monitor the effects of changes in certain subjects recommended in previous evaluation reports.

With the appointment of three new staff at the end of 1984, it became possible to extend and deepen audio-visual attendant services. In addition, the Centre was able to undertake the

production of a number of video tapes. Clients included the University's Aboriginal Education Unit, the Administration and the Commonwealth Department of Education.

Research activities initiated include the evaluation of academic staff for promotion and tenure, problem-based learning, pass and attrition rates and tertiary curriculum development, all of which are of crucial importance to teaching in the University.

External Studies Division

During the year, 757 new and continuing students enrolled in eight courses designed to upgrade teaching training at diploma and degree levels. This represented an increase of 9.08 per cent over 1984 and was largely the result of increased enrolments of new students in Second Session in both the Bachelor of Education (Primary) Bridging Course and the Bachelor of Education (Primary) Conversion Course. Fifty-seven subjects were offered in Session I and 51 in Session II.

New and continuing students attended Orientation days in February and July—230 and 210, respectively. The value of such face-to-face contact continued to be important and provided opportunities for students to visit the University Co-op Bookshop and to inspect the Michael Birt Library. Additional seminars or study days were held for 18 subjects in Session I and 20 in Session II. All students in the Bachelor of Education (Physical and Health Education) Conversion Course were required to attend compulsory schools in May and August.

Advice to and from students continued to be provided through the *External Studies Newsletter*. The answering service facility was also used extensively for contact between students and teaching staff.

Significant feed back resulted from the comprehensive study by the Head of External Studies, Mr J. Hazell, on 'Search Strategies of External Students', published in September. Arising from this,



Scene in the University Library



Head of the Centre for Teaching Development is Dr John Panter, seen here on the right of the picture

some aspects of the provision of service to students will be reappraised and Library staff will consider a more extended approach in future library orientation sessions.

Mr Hazell continued as convener of the Special Interest Group on Library Services within the Australian and South Pacific External Studies Association (ASPESA). In August he attended the 13th World Conference of the International Council for Distance Education, held jointly in Melbourne with ASPESA, and

presented a paper on search strategies of external students. Papers, demonstrations and displays featured some of the new technologies relevant to distance education.

In October Wollongong participated in an intrastate telephone conference hook-up which formed part of the Conference, NSW Distance Education, organised by the NSW Committee of the National Information Technology Council. This forum session drew attention to the increased need to encompass appropriate new technologies, supporting views expressed by the Standing Committee on External Studies of the Commonwealth Tertiary Education Commission. Guidelines for technological delivery will be developed to ensure positive future planning.

Research interests

Faculty of Commerce

The Department of Accountancy and Legal Studies has three data bases which form significant research projects.

In the legal studies area there is the Australian Corporate Law Data Base, which was expanded and upgraded during the year. Users of the data base can now obtain details of all Australian cases from 1961 to 1985, relating to a particular point of corporate law with which they are concerned; details of all important cases before 1961 are also included. An important change in 1985 is that the data base now provides a synopsis of all articles on corporate law published in Australian journals.

This year the data base became publicly available to the legal profession through its inclusion on a national legal retrieval system. Income from this source is helping to fund the research. As well as providing an important community service, the data base, during the year, provided the basis for an article in an international journal, a conference paper and for the second edition of *The Australian Corporate Law Reference*, to be published shortly. In the accounting area two data bases cover the accounting

methods used by Australian and New Zealand public companies. A book was published on New Zealand accounting methods and, immediately that was completed, work began on the book on Australian accounting methods. These books, together with earlier editions, provide an analysis of trends in accounting methods which are useful for accounting historians, for teaching of accounting, and, most important, for those establishing policies in the accounting area.

In addition, individual staff members pursued research interests, and produced publications and conference papers on Civil liberties and police powers; Family law; Corporate law; Joint ventures and natural resources law; The judicial process; A true and fair view in accounting; The behavioural impact of audit reports; Professional ethics (accounting). All members of the Department of Business Policy and Operations' academic staff are engaged in research programs. Two research projects have attracted funding from outside the university, another is based on a university grant.

Current research projects include a stock exchange investment

study of larger Australian Companies including B.H.P. and Elders I.X.L.; a study of Australian Financial Institution documents (funded by the Reserve Bank); research on Product Management in Australia; organisational decisions on high-technology purchases; consumer interest groups including life style changes in Australia and the consequent effects on the market place; and funded research on the implementation of technological change in financial institutions.

The Foundation Chair in the Department was advertised in 1985, attracting an excellent field of applicants. It is expected that the Foundation Professor of the new department will take up the appointment in 1986. With the establishment of the new chair the Department will be in a position to give focus to the research efforts of its members and direction to the development of its teaching program.

The Department of Economics continued an active research program in 1985 with determinants of occupational and industrial segregation (research grants from the Reserve Bank of Australia and from the University of Wollongong); labour markets for handicapped workers (research

Publications

On this and ensuing pages research topics are reported in narrative form. As last year, research publications are once again covered in a separate document. Entitled *The University of Wollongong Research Publications*, it will be

prepared as a supplement to *The University of Wollongong Gazette*, which will ensure a distribution of over 5,000 copies. It is anticipated that the supplement will appear as part of the May issue.

grants from the Bureau of Labour Market Research and from the University of Wollongong); economic change in Wollongong (research grant from ARGS); aboriginal employment; employment in the arts (research grant from the University of Wollongong); energy policy in the EEC; trade union response to technological change; industrial relations in the NSW road transport industry; economic policy in Papua New Guinea and in other small economies of the South Pacific; protection and unemployment in Australian manufacturing industry; input-output analysis; changes in hours worked; Australian national income accounts.

Four members of the Department attended the 14th Conference of Economists and presented three papers to the Conference; other conferences attended by members of staff (with papers given) were: Rural Youth Seminar (keynote address, and conference paper); Biennial Conference of the Association of Industrial Relations Academics of Australia and New Zealand; National Aboriginal Research Conference (conference paper). In all, members of the Department published 25 refereed articles, chapters in monographs, and conference papers during the year.

Members of the School of Industrial and Administrative Studies have pursued interests in Mathematics, Organisational Communication and Organisation Development, Occupational Safety, Statistical Package for Microcomputers, Education in Computing, Library Computer Systems, Expert Systems in Investment Portfolio Selection, Long Range Planning in the Public Sector, Use of Personal Computers in Small Business, Decision Theory, Acceptance of Technological Change, Robotics, Computers and Music Composition, Computers and Primary Education, Career Stages in Adults, Job Satisfaction, Staff Development and Adult Learning. The diversity of research activities reflects the multi-disciplinary nature of the team with three basic areas of focus: the developmental activities in



Chairman of the Faculty of Education, Professor Ron King, directed research into varied channels, and presented papers relating to his policy research to conferences on Education at national and state conferences

computer usage particularly in Microcomputers, Administration, and Adult Education.

Publications resulting from this research in 1985 include four refereed articles, three monographs and a conference paper.

Faculty of Education

Research activities in the Faculty of Education are both many and varied, reflecting the wide range of interests within the Faculty. Stemming from this research, academic publications, conference presentations and practical applications of benefit both in the field of education and in the wider community are seen as positive evidence of academic participation in the real issues of today.

During the year, a number of Faculty staff were invited to attend international and national conferences to report on their research.

Professor Ron King presented papers related to his policy research to conferences of the Australian College of Education and University Administrators and to a meeting of the New South Wales Institute of Educational Research.

In November, Professor Carla Fasano presented a paper entitled *New Information Technology* to the Meeting of Professors of Education Conference in Hobart.

Dr Ted Booth undertook a Contract Evaluation Study funded by the Commonwealth Department of Education. This project will run from June 1985 to June 1986; the purpose of the study is

to evaluate current In-Service programs and their efficacy in equipping teachers to work with adolescents of non-English speaking backgrounds. Other university staff involved are Mary Kalantzis and Bill Cope, Centre for Multicultural Studies.

Dr Darol Cavanagh is engaged in research projects funded by the Participation and Equity Project. Dr Phillip de Lacey has published articles and a book arising from research of socio-cultural issues in education with co-workers Professor B.S. Randhawa and Professor M.E. Poole. *Culture and Life Possibilities: Australia in Transition* (Sydney, 1985). Dr de Lacey has also been engaged in research with Professor Dennis Hunt in 'The Growth of Intelligence and Personality in Socio-Cultural Context', funded by the Project Enrichment of Childhood. Another major project funded by the University of Wollongong, 'Processes and Effects of Compensatory Education', has also been undertaken by Dr de Lacey in 1985.

Dr Tony Fielding travelled to the UK early in 1985 to continue his joint Australia-British research studies in teacher development. This led to the publication of papers in the Australian Journal of Teacher Education.

Dr Lyn Gow published articles and presented several conference papers dealing with her special interest in the concept of generalisation and maintenance of behaviour change for intellectually disabled people. Dr Gow's main research effort has been to

investigate the use of verbal self-instruction with a sheltered workshop population. The technique (VSIIT) is applied to the teaching of complex skills in a way that is conducive to the learning of how to solve the problem and complete the task; this can then be applied to other similar tasks. This project was funded by a University of Wollongong Research Grant.

Mr Neil Hall has investigated the use of computers in early childhood education and the use of microcomputers in process writing. Both projects are funded by the Apple Education Foundation of Australia; the publication of monographs is the expected outcome of this research.

Ms Jenny Hammond has been involved in a continuing naturalistic study of literacy development of English as a second language (ESL) students which has examined the effectiveness of using the process approach to writing with children with other than English speaking backgrounds. In 1985, the developing awareness of genre in the literacy development of ESL students and the role of modelling in this process has been examined. A conference presentation and published article resulted from this study.

Mr Barry Harper received funding

from the CSIRO/University Collaborative Grant and from the Research Grants Committee for a study of 'The Determination of Plant Stand Parameters using Hemispherical Photographs and Multicomponent Analysis'. Other staff involved were Dr P.E. Simmonds (Physics Department, University of Wollongong) and Dr D. Jupp (Division of Land and Water Resources, CSIRO).

Dr Noeline Kyle studied women teachers and administration in Australia for publication as a monograph. Dr Kyle also co-researched a study and evaluation of the recent change from single-sex to co-educational state, Catholic and private secondary schools in the Illawarra region with Dr Jenny Jones. Dr Jones has worked with Ms Josie Castle of the Department of History in a study of women in higher education.

A study of salt manufacture and of mining operations in the early Illawarra development was undertaken by Mr Brian Rogers.

Faculty of Engineering

Major research activities in the area of Civil and Mining Engineering centred on space trusses, vibration, hydraulics and geomechanics and in the mining area—roof bolt drilling and roof



Professor Brian Smith, Chairman of the Department of Electrical and Computer Engineering

control. The Department was also, and still is, actively involved in teaching and research in the area of computer-aided drafting and design. An Advisory Committee of the Mining Research Centre has been established to guide and foster the Centre's activities.

In 1985 a total of six MEs and four PhDs graduated from the Department, which continues to attract overseas students whose origins include China, Taiwan, The Philippines, Egypt and Nigeria. Post-graduate numbers total 33 ME and 10 PhD. A significant proportion are enrolled in formal courses. Overseas visitors from the UK, Japan, Hong Kong, South Africa and Kashmir provided lectures or a series of lectures on a range of research topics of interest to staff and post-graduates.

Staff with their industrial research contacts attracted a considerable amount of research equipment, which has been given to the Department on very long term loan. Such equipment totalled some \$120,000 in 1985 in addition to consultancies which brought in about \$100,000. Internal and external research grants totalled \$44,000.

Reliable but inexpensive sensors in Electrical and Computer Engineering are seen as the key to the wider application of robots in industry by increasing their versatility and simplifying the navigation problem for mobile robots. This year saw the development of an inexpensive binary vision system for parts location, an articulated whisker

In the Faculty of Education Mr Neil Hall has investigated the use of computers in early childhood education and the use of micro-computers in process writing (picture courtesy Unidirect)



probe to record the outline of small objects, hardware and software for real-time dynamic control of robot arms and a simple expert system for navigation by a mobile robot.

Work continued on diffraction tomographic imaging techniques which make use of measurements of the field, scattered from an object illuminated by microwaves, to reconstruct an image of the object. The Theoretical Control Group investigated a range of optimisation and adaptive control problems associated with adaptive antenna arrays, deterministic disturbances, frequency tracking in digital systems and the automatic tuning of digital controllers.

Other activities included investigations into the operation and design of axial flux induction machines; the development of efficient, economical wind and solar powered power supplies for remote areas; studies of the corona characteristics of specific electrode configurations in electrostatic precipitators. Internal and external research grants totalled \$119,000.

Investigations in the Department of Mechanical Engineering into the behaviour and design of pipelines and equipment for pneumatically conveying particular materials were continued, using an experimental test rig and one kilometre of pipeline provided largely by NEI John Thompson. Another major interest of the Bulk Solids Handling Group has been an examination of the interaction of mass flow bins and feeders.

The Gear Research Team, which includes a number of engineers from the local steel industry, refined methods of determined geometry factors for spur and helical gears, and also developed design procedures for the relevant new Australian Standard.

Work continued on the protection of solar hot water systems against freezing, the quantitative assessment of the solar properties of materials and on cost efficient methods of harvesting wind energy. Other areas of activity include the computer simulation of water



Second year student in the Department of Metallurgy, Julie Bibbo applied for a job with John Lysaght (Aust) Ltd, was successful, and is now completing her degree part-time

wave problems; studies of wakes generated by aerofoils, the experimental investigation of such problems as boundary layer/jet interaction, the behaviour of oil films in high-speed thrust bearings and the application of the results of a study of the diffusion of methane gas through water to a mine.

Internal and external research grants totalled \$245,000.

A number of investigations were conducted by the Department of Metallurgy, relating to the activities of local industries, particularly BHP Steel International, which supported research into the structure and properties of high strength low alloy steels and various aspects of blast furnace charge preparation. Other sponsored work included the evaluation of a Japanese test for weld cracking



Research work by the Gear Research Team in the Department of Mechanical Engineering has refined methods of determined geometry for spur and helical gears, and developed design procedures for the New Australian Standard. Seen here is Dr Bob Whewy displaying a helical gear sheared during testing

susceptibility, a preliminary study of potential medical applications of metallic glasses, and continued study of shape memory behaviour.

Studies of the physical metallurgy of culturally significant artefacts was intensified under Australia-China Council funding, which supported a 12 month visit by a leading Chinese archaeo-metallurgist. A Chinese graduate student supported through the recently established agreements with Chinese Universities began work on aspects of rapid recrystallisation.

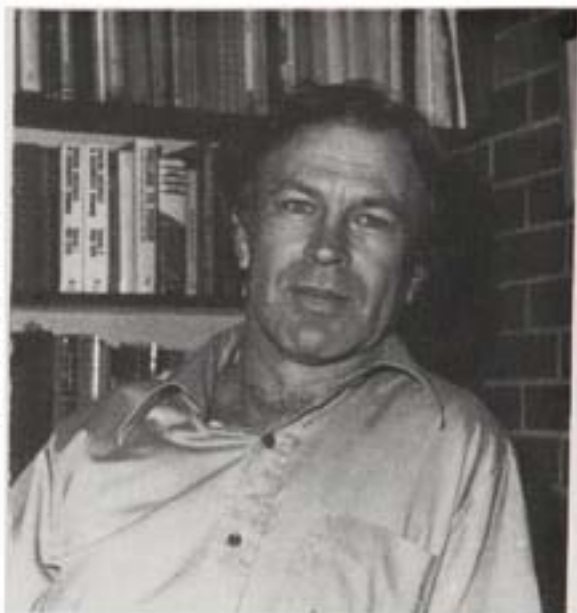
Work was continued in other areas, notably hydraulic bulging; problems in extractive metallurgy of Indonesian ores, supported by ADAB; crystallisation of metallic glasses; corrosion studies; and the final editing and publication of the proceedings of the highly successful International Conference on High Strength Low Alloy Steels held at the University in 1984.

Internal and external research grants totalled about \$130,000. The Automation and Engineering Applications Centre Limited was established to provide a consultant service to industry in the field of automation and materials handling with particular reference to the application of robots to the manufacture and assembly of components. Grants have been received from the Federal Government of \$750,000 for recurrent funds, and approximately \$1,500,000 for equipment and \$3,000,000 for a building on campus to be shared with the Illawarra Technology Centre.

Faculty of Humanities

Research interests in the Faculty remain many and varied. Most departments have no single, co-ordinated research effort. Research tends to be carried out on an individual basis, with occasional collaboration between staff members. An example of the collaborative working is the project on Australian Humour currently under way in the English Literature and Drama Departments (Miss Jones and Mr McGaw). Occasionally there has been co-operation in research between members of this Faculty and those in others, for example,

*Professor Jim Hagan
in the Faculty of
Humanities: his
research interests
include industrial
relations, regional
history and
aboriginal
employment*



In the Department of European Languages Dr Gaetano Rando is actively engaged in studies of the local Italian community

in the work of Professor Hagan and Mr Castle (Commerce) on industrial relations, regional history, and aboriginal employment.

For the most part, however, the Faculty's research profile is one of a large number of individual projects. The variety of directions makes it difficult to summarise the overall picture. One useful classification might relate to the category of what many would call 'pure' scholarship, that is, areas of research which are largely confined to matters of a traditionally academic kind.

The refinement and perfection of pure knowledge—what some would define as the pursuit of excellence for its own sake—

obviously constitutes the backbone of any true Faculty of Humanities. Among the more outstanding examples of work of this type currently being undertaken one might mention Professor Leal's very extensive work on Drieu La Rochelle and concepts of decadence in twentieth century literature. Other examples include Mr McGaw's edition of the poems of Surrey, Mr McConchie's research on sixteenth-century lexicography, and Dr Piggins' books on evangelism in the British Isles.

One of the outstanding features of the Humanities Faculty at this University is nevertheless its refusal to limit itself to the realm of pure erudition. Many members of the Faculty are engaged in research which confronts contemporary issues. A leading effort in this direction comes from the Department of History and Philosophy of Science, where Dr Badham had recently completed a book entitled *Theories of Industrial Society*. Other continuing projects are concerned with shedding light on such controversial topics as the Vitamin C debate, nuclear power, and, more generally, the social impact of science and technology. Interest in contemporary issues is of course by no means limited to the History and Philosophy of Science Department. In Philosophy, for example, Dr Beran has written a book entitled *The Consent Theory of Political Obligation and Authority*.



Active in the Centre for Technological and Social Change are Professor Stephen Hill (left) and Professor Ron Johnston

Yet another useful distinction in the types of research going on in the Faculty might be introduced at this point: that which would differentiate between projects of international significance, and those whose input is of a more strictly local character. By no means does this distinction apply a value judgement. The Faculty as a whole is committed to the application of its skills and talents to the further understanding of the Illawarra Region, its history and its particular character. There is hardly a Department which is not deeply engaged in research of this kind. Current projects run the gamut from the studies on the Italian community done by Mr Rando in European Languages, to the research of local place-names done by Mr McConchie and Ms Gillam in English Language. Perhaps the real home of such research, however, is understandably the History Department. Mrs Castle has just published a book (*Nursing at the Wollongong Hospital, 1926-1982*). Other projects include aspects of Australian History such as trade unionism, international relations and capitalism. Though these projects have an Australian focus, their investigation and interpretation rest on an international context.

This brief summary is far from doing full justice to the variety of research which presently characterises the Faculty. However, it is clear even from this rapid survey that the Faculty's research effort is both wide-ranging and dynamic.

Nowhere is this clearer than in the development of the Centre for Technology and Social Change (TASC). TASC had its origin in a plan developed jointly by Professor Hill of the Faculty of Social Science, and Professor Johnston of this Faculty. It rapidly expanded to include members from a variety of departments in these and other Faculties. Its main activities involve research of an entrepreneurial type, in which the Centre acts as a consultant to government departments and private firms which provide it with short-term funding for particular purposes. This kind of

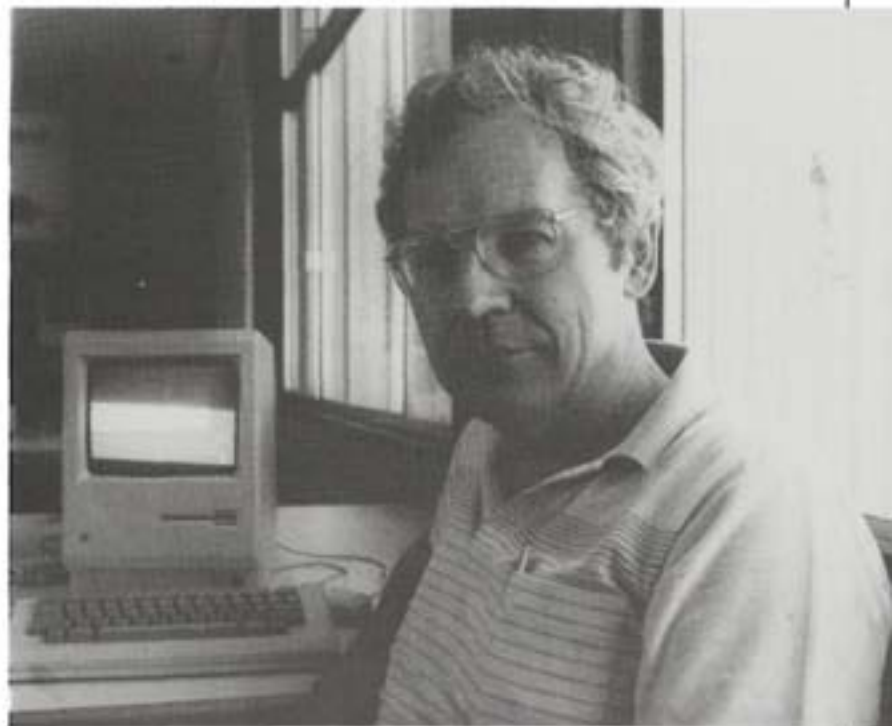
enterprise assumes more significance as governments reduce their support for research within universities. How well theoretical or 'pure' research can fare in these circumstances is a serious problem for this and all other university faculties.

Faculty of Mathematical Sciences

Research activities of the Department of Computing Science continued to emphasise the centrality of programming science as the primary area of departmental research. Thus, many of the research areas lie in the development of appropriate software techniques and methodologies.

The construction and application of formal specifications in program development is one of the central problems facing computer science. Formal techniques have been used successfully for derivation of small programs. It is therefore necessary to develop methods for applying formal techniques in the specification and development of much larger and more complex programs. Work on developing applicable formal methods for these types of problems is under investigation.

Chairman of the Department of Computing Science in the Faculty of Mathematical Sciences is Professor Juris Reinfelds





In the School of Health Sciences Mr Vince Nethery (left) makes a test of muscular strength on the 'Cybex' isokinetic dynamometer

Modern computer architectures are designed to allow several computations to be performed in parallel. The details of the computer architecture are reflected in models of computation which can then be used as a basis for the design of parallel algorithms. Parallel algorithms for certain complex problems have been developed and implemented. Their execution under a given computational model using independent processors and private memory is being simulated on a computer network.

The increasing size and complexity of modern databases necessitates the development of software for effectively integrating the requirements of the user. The most promising tools enabling the design of such software are the generalised Computer Aided Design (CAD) packages. These are based on established and consistent methodologies and use menus, forms and/or icons. The Department is developing CAD packages for the design of network and relational database software. The basis of the work is a comprehensive design methodology which includes conceptual, logical and physical design, application development and database evolution.

Research in 1985 was undertaken in the areas of speech analysis, synthesis and recognition. A dedicated microcomputer system

provides digital-to-analog and analog-to-digital conversion facilities and a speech processing software package. Two major projects are in progress. The first is the development of an automatic speech recognition system for the Chinese language which will serve as a front-end to a speech-driven Chinese computer system. This project is Australian Research Grants Scheme funded. It is undertaken in collaboration with the Australian National University.

Research activities in the Department of Mathematics continued in the fields of Pure Mathematics, Applied Mathematics and Statistics. Work progressed in all the areas mentioned in previous reports and was stimulated by the appointment of new members of staff.

Research and Logic is of great interest because of the foundation it provides for set theory, which in turn provides foundations for Mathematics, as well as for Theoretical Computer Science. Some unsatisfactory aspects in the foundations of set theory have been examined and progress has been made here as well as in some areas of Logic used by Computer Scientists.

Systems of illative combinatory logic, which have been used as foundations for higher order predicate logic, set theory,

category theory and arithmetic, were further investigated with a view to finding stronger consistency proofs. Alternative systems are also being considered for suitability for the foundations of cardinal and ordinary number theory.

Decision theory is one area of current research in Statistics. Faced with the problem of finding one population which is different from other populations with regard to a certain characteristic, an experimenter may take observations from different populations in order. There is a known cost of taking each observation and there is also a given cost if the correct population is not found. Optimal procedure which minimises the total cost is very difficult to obtain in most cases. For a certain class of populations, it is shown that the optimal procedure is a myopic procedure, namely, at each stage the experimenter acts as if he has exactly one observation available.

Moving boundary problems arise in many situations and were studied for their theoretical interest and practical application. Casting of thermoplastics or metal, freezing or thawing of foods and the production of ice yield examples of such problems. In chemical engineering the flow of a fluid through a packed bed of chemically reacting particles is a common process and a moving boundary problem occurs within each particle (usually assumed spherical). The number of exact solutions to such problems is limited and therefore some approximate procedure is necessary. Research in moving boundaries has been developed along two lines, first by developing a new semi-analytic procedure and secondly by obtaining upper and lower bounds for the motion of the boundary. The subject admits considerable scope for further work along these lines.

Other research areas in the Department of Mathematics include Numerical Analysis, Fluid Dynamics, Ocean Dynamics, Beach Erosion, Diffusion Theory, Experimental Design, Robust Statistical Inference, Statistical Ecology, Time Series, Applied Number Theory, Partial Differen-



In the Department of Physics Dr Cary Freeth tops-up the Department's cryostat with liquid nitrogen.

tial Equations, Lattice Theory and Functional and Classical Analysis.

Faculty of Science

The Department of Biology continued its active research program along the same lines as those reported in 1984, with the exception that the two new members of staff resulted in an extension of the research areas covered into ecological genetics of marine invertebrates (Dr D.J. Ayre) and immunobiology and the inheritance of acquired characteristics (Dr E.J. Steele). In 1985 four current Australian Research Grants Scheme grants were renewed with a 22 per cent increase over the 1984 figure (to approximately \$76,000).

Two staff members were on Overseas Study Professional leave. Dr R. McC. Lilley spent Session 1 working at the University of Göttingen in Germany. Dr R.J. Whelan spent Session 2 largely at the University of Florida in the USA.

During 1985, the Department had two visiting researchers: Professor H. Gimpler from University of Würzburg, Germany, spent Session 1 working with the microbial physiology group of Professor Brown; for part of Session 2, Dr M.C. Shastri from Mysore, India, worked with Dr D.R. Murray.

Research in the Department of Chemistry continued at a high level, with a spread of fundamental and applied projects. Collaboration with the CSIRO, other universities, and a range of industrial firms was further developed, and a high publication rate maintained.

All research programs outlined in the 1984 Report are continuing.

An important development has been the establishment of several new research areas by new academic staff. These include a major development in Biochemistry (Dr R. Truscott) with studies into plant metabolism and the mechanism of senile cataract formation. New areas of Organic Chemistry, developed by Dr S. Pyne, are also of biological significance, including the chemistry of leukotrienes and prostaglandins. He has also been awarded a \$21,000 Australia Research Grants Commission (ARGC) grant for studies in asymmetric synthesis.

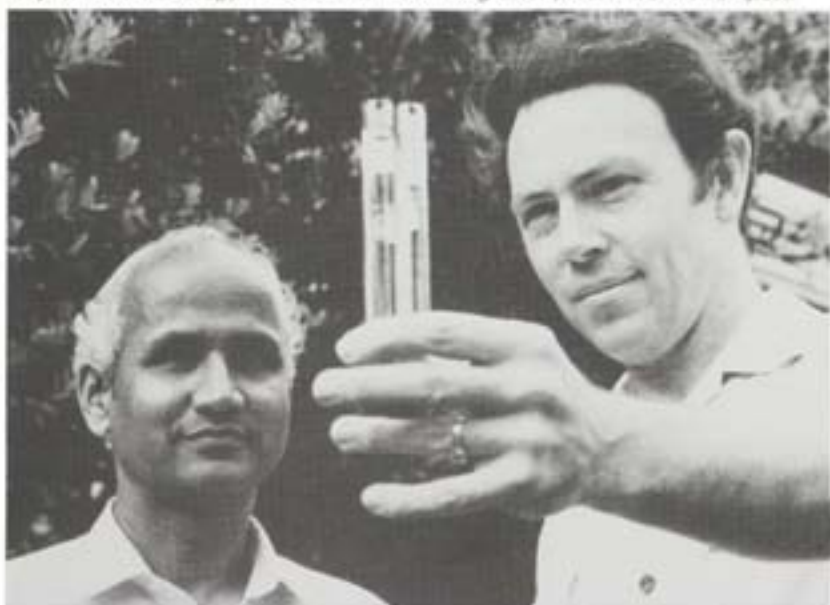
Dr Guilhaus has strengthened the Department's establishment mass spectrometry group. In particular, the marrying of a Fast Atomic Bombardment source to one of our mass spectrometers has opened up exciting new developments, such as structural studies

on metal surfaces and of involatile organic and inorganic salts. Research programs introduced by Dr G. Wallace in electro-analytical chemistry, such as the development of chemically modified electrodes and electrochemical detectors, have already attracted the attention of industry. A program of particular commercial potential is the development of microprocessor-controlled on-site analysis systems.

The Department was successful in attracting \$67,000 of ARGC funding in 1985, including two new grants. Another new development which will provide major impetus to research in general was the acquisition of a Fourier-transform 90 MHz n.m.r. spectrophotometer.

The Department of Geology maintained its active research program, participating in a number of major conferences and publishing in a wide range of Australian and international journals. Interaction with industry remained at a high level, particularly in relation to oil exploration. The areas of research activities in the Department of Physics remained unchanged although a new aspect was added to the astronomy program with the arrival in May of a new staff member. The heavy teaching loads in the past two years have severely restricted the amount of research the Department has

For three months Dr M. C. S. Shastri of the Central Food Technological Research Institute of Mysore, India, collaborated with Dr David Murray of the Department of Biology in research on obtaining seed protein from chick peas.



been able to accomplish even though it has been moderately well funded by the Australian Research Grants Scheme.

Research activities of the School of Health Sciences included: relationship among joint stress, shoe design and playing surfaces in netball (funded by the Australian Science Sports Program); relationships between players, team performance and coaching behaviour in basketball (research grant from the Australian Sports Commission); safety aspects of rugby scrummaging (funded by University of Wollongong); assessment of elite athlete performance; relationships between muscular innervation and work; surfboard design and surfing safety.

Members of the School presented eight papers to a range of conferences and members had 11 papers published or accepted for publication during the year.

Faculty of Social Sciences

In 1985, as previously, several members of the Department of Geography staff and post-graduate students were involved in consultancy work for outside organisations concerned with matters relating to environmental, port development, transport and shipping services. More effectively to meet the burgeoning demand for assistance with pressing problems in the

transport field, a Centre for Transport Policy Analysis (under the directorship of Dr R. Robinson) will be established within the Department.

Other departmental research activities of particular importance include the first fruits of a rapidly developing involvement by the Physical Geographers with Arid and Northern Australia, culminating in Dr Nanson's \$40,000 grant from the Department of Science to facilitate work on the flood-plain of the East Alligator River (NT)—made necessary by the Ranger Uranium Mine developments at Jabiru. Funding to assist with further studies in that part of the continent (jointly with the Geology Department) is being sought.

The aims of the research in the Department of Psychology program include encouraging students to specialise in the area of psychology, as well as developing their ability to conceptualise significant problems in psychology, conduct a research program and communicate their findings to academic colleagues. In 1985, the Department introduced the Doctorate in Clinical Psychology. Its aims encompass those of the MA (Hons) in Applied Psychology, and those of the post-graduate research program—to produce a psychologist with both professional and research skills. The Department has continued to grow both at the undergraduate



Appointed to the Chair of Psychology in 1985—Professor Bill Lovegrove, one of whose research interests is dyslexia—specific reading disability

and graduate levels. The undergraduate intake increased from 169 to 183 Effective Full-time Students, and the graduate intake from 50 to 60 EFTS in 1984.

Dr William Lovegrove was appointed to the Chair of Psychology. He is an experimentalist from the University of Tasmania. His research interests are in the area of specific reading disability or dyslexia, colour-spatial frequency channels. His current research is considering the relationship between vision, phonological encoding and aspects of memory in specific reading disability.

The research aim in the Department of Sociology engages with central contemporary social issues on the one hand, and with significant theoretical questions on the other. On the social issues side research has been concerned with ethnicity and class relations, the social context and consequences of regional economic conditions, social consequences of technological change, the link between technological strategies and underdevelopment, social aspects of environmental movements, reproductive technology and social control, and present-day transformations of the military. The focus of these issues has been linked with various approaches to theorising, for example, on 'Critical School' theory, analyses of theories of class and gender, the development of theories concerning

Dr Andrew Jakubowicz is in the Department of Sociology, in which research concentrates on contemporary social issues and significant theoretical questions





Creativity is encouraged in all fields of the arts in the School of Creative Arts.

technological change and ecological interest in industrial society, and the nature of the processes of economic and social development. While there have been points of collaboration between research areas, the Department's approach has been largely to support autonomy of research. Staff have published both internationally and within Australia; reports have been produced for several government departments on education, ethnic minorities and science and technology policy. Various staff members have also attracted research grants from such sources as the Australian Research Grants Scheme, The University of Wollongong Research Grants Committee and the Australian Government Department of Science. During 1985 the Centre for Multi-cultural Studies took up a number of new projects, while completing others begun in 1984. Projects completed include a report to the Department of Immigration and Ethnic Affairs on the maintenance of the German and Macedonian languages in Wollongong (*The Language Question*) and on social needs (*Ethnic Community Networks in Western Sydney*), a report to the Committee of Review of Adult Migrant Education Program (*The Learning Process*) and a report to the Department of Employment and Industrial Relations (*Industrial Democracy in a Multiethnic Workforce*).

Work in progress in 1985 included for the Department of Immigration and Ethnic Affairs a national study of language learning needs of workforce entrants and a study of strategies for teaching second languages to first language illiterates, for the Human Rights Commission a study of anti-Asian racism in schools, and for the Department of Technical and Further Education the development of curriculum for a social literacy course for non-English speakers.

School of Creative Arts

Research in the School of Creative Arts takes a form that differs from that in other Schools, Centres and Departments. It takes the form of original and usually innovative work in writing, composing, painting, sculpting, and so on through the wide range of the School's existing activities. The ensuing report attempts to summarise briefly the School's activities. Edward Cowie, Professor and Head of the School, had a busy year. He has had published six new works, had five premieres throughout the world, and completed three major orchestral commissions.

He began work on his opera, *Ned Kelly*, due for premiere in 1988, and upon the second symphony (Australian) also due for premiere in 1988.

He has had three one-man exhibitions during the year in Australia, the USA and the UK. He has also completed 16 major one-hour radio programs for ABC FM (Towards new music), due for transmission in 1986, and also completed the first film in a trilogy commissioned by BBC TV 2 in the UK. He has also delivered papers in several major conferences, including the ANZAAS conference in Melbourne, and two important Federal Conferences in Canberra. In 1985, Professor Cowie gave 57 public lectures/addresses.

Ron Pretty (Poet), Senior Lecturer in the SCA, has completed his first novel, *Archilles with a Limp*, and has had another book accepted (in principle) by Edward Arnold.



Head of the School of Creative Arts is Professor Edward Cowie, seen here working on a manuscript. He is a composer with a world reputation.

Bert Flugelman has had a number of major commissions in 1985, and completed a series of new maquettes, and watercolour paintings. He has had three exhibitions in Australia this year. His most recent work, *Gateway to Mount Keira*, has been erected, having been constructed, in stainless steel, by BHP Steel (it is one of the largest sculptures of its kind in Australia). The work weighs 5½ tonnes. Bert Flugelman is Lecturer in Sculpture in the SCA.

Bob Harper (Director) joined the staff in 1985, and has mounted a number of major productions, including *The Mandrake*, by Machiavelli, *Dames at Sea*, and *the Banana Bender*.

Andrew Ford (composed/painted conductor) is a Lecturer in the SCA. He founded the SCAW ensemble in Wollongong which gave a number of important Australian and world premieres in 1985. His own work has flourished, with workshops on his music by the Australian Ensemble, new performances by the Sydney Symphony Orchestra and a performance of his opera *Poe* by the Australian Opera in Sydney. He was Bennelong Composer in Residence for 1985. His show, *Tall Stories*, went on



The School of Creative Arts frequently stages exhibitions to display work by students and staff as well as work from other educational institutions including primary and secondary schools

stage in November. He has also been performed and recorded in Australia, the UK and the USA. Rodney Hollands (Music educator) is Principal Lecturer. He spent the year in intensive practice as a pianist, and contributed significantly to SCA music programs. He has also spent the year establishing a Japan/China project which, under his co-ordination, is due to begin in 1986.

John Eveleigh (Painter) is Senior Lecturer and Gallery Co-ordinator. John Eveleigh has initiated many superb exhibitions in the new Long Gallery in the University, and has contributed greatly to the excellence of the Art works by students. He had three major one-man shows in Australia and the UK.

Richard Hook (Printmaker), Lecturer, had four one-man shows in Australia. He was also active in post-graduate supervision, and organisation of Fine Arts matters in the School.

Wayne Dixon (Conductor/Composer), Lecturer, is principal Conductor of the Wollongong Symphony Orchestra. He was selected as one of the conductors for the ABC Conducting Days in Queensland with the Queensland Symphony Orchestra in 1985. He composed a number of new works in the year (some

of his Masters studies, which were premiered in November). Lisa Scott Murphy (Actor/Director) is a Lecturer who joined the full-time staff in 1985. She directed two major productions, took part in National Theatre workshops, and acted in the Reject Theatre Company, Canberra. She has also played a significant role in the organisation of Inter-arts projects in the SCA.

Liz Jeneid (Textile Artist), part-time Lecturer, had six one-person exhibitions throughout Australia, and in Indonesia. She published articles on techniques, and is very active in the Crafts Guilds of Australia.

Joan Chapple (Textile Artist), Lecturer, exhibited widely in 1985, and recently experimented with new techniques in textile reliefs. She is currently in Europe studying new techniques in an Arts School in London.

Howard Mitchell (Painter) is a Lecturer, who in 1985 returned from a year of overseas study. In particular, the work he undertook in New York is significant. His watercolours featured in an exhibition of his work mounted towards the end of 1985.

John Stender (Musician), Lecturer, worked tirelessly for the promotion of String Playing in the SCA and in the recently federated Conservatorium of

Music. He is leader of the Wollongong Symphony Orchestra, and has played solo roles in many concerts, including works by the classical masters as well as some of the most challenging of the new 20th century repertoire.

Peter Shepherd (Painter), Senior Lecturer, had two major exhibitions of his paintings, one of which was his show for the degree of Master of Creative Arts. He returned from a world study tour in the later part of 1984—a tour which clearly affected the work he now executes in oils.

Lindsay Duncan (Ceramicist), a Lecturer in the SCA, joined the full-time staff in 1985. His work in porcelain has been on show in recent exhibitions. The techniques displayed are those he studied in 1984 in Italy, India, the USA and the UK.

Since its foundation in its present form in 1983, the School of Creative Arts has encouraged distinguished Australian and overseas artists to take periods of residency in the School. These have included: Dr Arthur Jacobs, musician and author (British Council visit); John Amis, musician and author (British Council visit); James Wishart, composer and pianist; and Don Bennets, film maker.

Centre for Studies in Literacy

The Centre has been engaged in three main research thrusts during 1985:

Bendigo Reading Recovery Evaluation Project (budget \$15,000—Schools Commission); Developing a Theory of Literacy Education (budget \$6,500—The University of Wollongong);

Factors Influencing Teacher Change on the Teaching of Writing (budget \$2,105—The University of Wollongong).

On November 1 the Centre was awarded a \$10,000 grant to evaluate a pilot implementation of the Early Literacy in Childhood program by NSW Department of Education. The Department has invited the Centre to tender for a major evaluation of this project in 1986/87.

Centre for Technology and Social Change

The Centre for Technology and Social Change was established in the early part of 1984 as an independent, non-profit, research, consultancy and training organisation. From its inception the Centre's objectives were to enhance the understanding and social control of technological change to ensure that technological developments are employed for the benefit rather than the domination of society; to provide an informed analysis of the issues and problems associated with contemporary technological developments; and to raise the level of educational and technological skills in Australia required to deal with technological change.

The most effective ways of achieving these objectives were identified by creating an advanced and comprehensive knowledge base through research in core technology and social change issues, using the Centre's intellectual and knowledge-generation resources; by informing and influencing the community through dissemination of the Centre's knowledge within Australia and in the Asian/Pacific region, among government, industry, unions, educationists, media and community interests and by education, training, advice and publicity programs; and by generating sufficient funds through research, training and education to sustain the development of the Centre.

Based on existing intellectual resources and research work, the Centre has identified five major areas at the cutting edge of technology and social change for development as identifiable programs within the Centre. Each program is headed by an experienced Program Director from within the Centre, responsible for the growth of the program and sub-programs. The program areas are: Communication and Information Technology; Automation, Work Organisation and Employment; Science and Technology Policy; Science, Technology and Development; Technology, Work and Culture.

Major projects in 1985 have been:

- Study of trends in electronically stored information to establish methods by which trends in the accessibility of information may be determined; and to assess the implications of these trends for social policy.
- Study of the cultural, political and economic factors affecting the form, development and use of new communications technologies (video, cable, and satellite).
- Analysis of policies and strategies regarding new information technologies for governments, industry and community interests.
- Social impact study for a major engineering company under the Federal Government's Computer Integrated Manufacturing Demonstration Program.
- Joint project with the AMWU to produce a film on the role of CAD/CAM (computer-aided design/computer-aided manu-

facture) in the restructuring of manufacturing in NSW (funded by the NSW Government).

- Establishment of a library resource and extensive bibliography of international literature on the social implications of CAD/CAM technology.
- Development of set of indicators of high technology activity.
- Development of major training and research programs throughout the ASEAN and Pacific region, funded by the Australian Development Assistance Bureau, and the foundation for International Training, Canada.
- Development of a project on consequences for organisation culture and communication of information technology changes in the insurance industry.

Much preparatory work has been done on other projects to be formalised in 1986.

Total value of contracts and grants in this year was \$260,000.

Mining Research Centre

The Mining Research Centre has brought together eight members of the Academic staff as an excellent working group willing and able to discuss a wide variety of mining problems. Each member of the group is researching and publishing in the mining area.

Collaboration exists with two Divisions of CSIRO—Geomechanics, in both Melbourne and Wollongong, and Fossil Fuels in Sydney. Collaboration also exists with The Australian Coal Industries Research Laboratories in many areas of the State and with the Australian Iron and Steel and Kempls Coal and Coke industrial groups.

Contract research has been taken on and significant results have been produced. Development work is progressing rapidly establishing a large-scale Roof Bolt drill-testing rig.

Research information has been published broadly with 29 publications resulting from the inception of the MRC.

A sum of \$22,000 has so far

been invested in Government Bonds with the interest being added to the principal. In line with the original proposal, the plans are that this investment should be brought up to a sum approaching \$200,000 within the five-year term in order that the returns from this investment will fund—in perpetuity—the basic two technical staff needed for the Centre.

The activities of the Mining Research Centre have been such that a considerable amount of interest has been shown by other members of the Department and to that end the Mining Research Centre itself has seeded another, the Civil Research Centre, with an initial grant of \$2,000. This Civil Research Centre is in an embryo stage at the moment but should bring together the other dozen or so members of the Department into an active group of researchers working collectively.

Some of the research activities, especially the work on methane and other gas problems, have flowed through to undergraduate courses and form the basis of a current formal postgraduate course.

Academic and allied services

Michael Birt Library

The increase in the use of the Library's service in 1985, on top of the high 1984 figures, indicates that demand for Library services continues to grow. The number of visits to the Library has risen from around 33,000 in 1982 to almost 60,000 in 1985. As might be expected, the extra students are becoming more sophisticated library users and are placing more demands on Reader Assistance staff.

While pressure on space continued in 1985, progress has been made towards the planning of a major extension to the Library building. As well as adding in excess of 3,500 square metres of floor space in the extension, the present building will be rearranged to improve use of space.

The reduction in the value of the Australian dollar in 1985 has a major impact on purchasing power, with the continuing commitment to serial publications

taking an increased proportion of the bookvote. In an attempt to control expenditure, a number of subscriptions to these publications was cancelled.

The Library has since 1982 been a user of the Australian Bibliographic Network (ABN), based on a computer at the National Library in Canberra. The service has been successful at increasing cataloguing output, despite its unavailability—due to a fire at the National Library earlier in the year, as well as some technical problems. ABN has played a central part in increasing cataloguing throughput. A book now takes an average of a few weeks, instead of months to process, which was the case before ABN was introduced.

In addition, the heavily used sections of the ex-Institute of Education material have now been incorporated in the main sequences.

Borrowing privileges were

discussed in 1985 and it was decided to extend loan facilities to the Friends of the University. The Office of Library Co-operation drew up the final details of a reciprocal borrowing scheme for post-graduates and staff in the University and Colleges of Advanced Education in New South Wales.

One of the recommendations of the Working Party on Library Development, which reported in 1984, was that Acquisition and Cataloguing should be brought together. This has now been achieved and some job rotation has already taken place, giving staff experience of different areas of the Library's operations.

Late in 1984, the University tendered for new computer equipment for both the Library and the Administration. An IBM System 38 computer was purchased, and it was hoped to have the circulation and cataloguing subsystems available in the 1985 academic year. In the event, because of delays in the delivery of both hardware and software this proved not to be possible. It is planned to have the first parts in operation by the beginning of first session in 1986. During 1985, the resources of the University Archives were concentrated on the maintenance of basic services. No active solicitation of research records occurred, but several existing depositors added material to the collection. Late in the year a significant collection of photographs, sound recordings and manuscripts, relating to village life and customs in Papua New Guinea, was received. Use of the Curriculum Resources Centre increased again 1985.



The Michael Birt Library is a rich storehouse, which was augmented significantly in 1985 by the generous endowment of rare books, some of them valuable beyond price. Here the University Librarian examines a rare copy of Boccaccio's 'The Decameron', donated to the University by Mr Luigi Strano

Loan statistics for the first half of 1985 show a 31 per cent increase, compared with the corresponding period in 1984.

Computer Centre

The Sperry mainframe handled the computing load during the year with reasonable comfort, even though in terms of notional dollars the throughput was 16 per cent higher than 1984. The main reason for the increased throughput was the addition of a second processor in November 1984 which effectively doubled the capacity of the system. Perhaps the main event of 1985 has been the installation of the IBM System 38 for Administration and Library with software packages from Taubert's of Melbourne and Stowe of Adelaide. Taubert's Finance System went live in September and their Payroll application was scheduled for January 1986. Stowe's Library systems are more problematic but the aim is for a live circulation system, as the first module, in March 1986.

A Communications link has been established between the 'standard' Beehive terminal and the IBM, via the Perkin-Elmer front-end and the Distributed Communications Processor which is being rented from Sperry. Software is now to be developed to set up meaningful dialogue using this link.

In October 1985 a Domain paging network, including three Apollo workstations, was installed in the Graphics Laboratory. Two of the workstations were to be relocated in two Engineering buildings in the New Year and a high-quality graph-plotter added. This network offers distributed scientific processing (each workstation is itself a powerful computer with comprehensive systems software and access to several hundred third party applications packages); a dramatic upgrade to the University's graphics equipment (the quality of Apollo's graphics is second to none); and a powerful computer-aided design/computer-aided manufacture (CAD/CAM) facility. The CAD/CAM development is being undertaken in co-operation



Analyst programmer Mark Hall looks on as the Vice-Chancellor, Professor Ken McKinnon, activates the Taubert Finance System for the University's payroll application

with Sperry. They are contributing the CIM/ME (Computer Integrated Manufacturing/Mechanical Engineering) package and software and hardware to interface the Domain network to the mainframe and to three Engineering Departments and the Technology Centre. All these contributed to the costs of the installation and all plan CAD/CAM projects for the near future.

Conservatorium of Music

As a result of the ready interest and support received from all areas of University administration, a smooth transition was experienced by the Wollongong Conservatorium of Music in its affiliation with the University during 1985.

An Interim Board of Management was appointed to oversee administration and academic development.

The proposed academic development offers to the Conservatorium the opportunity to widen the preparatory-level profile built up over 12 years as a

branch of the New South Wales State Conservatorium of Music. Effort is therefore being given to the development of more courses, with the hope that they can be available in the near future.

Current student statistics indicate an on-campus involvement of 791 students with a staffing of 32 part-time tutors, two casual administration positions (one shared), and the position of Principal.

Community interest in the Conservatorium continued to be expressed in scholarships and instruments received by the Conservatorium; participation by Conservatorium groups and students, particularly the Pre-Music Literacy Training Program, Elizabethan Players, Madrigal Group, Big Band, Chamber Music Groups and the Conservatorium String Orchestra.

Equipment expenditure was made available to the Conservatorium by the University Recurrent Resources Committee, ensuring integrity in programs relevant to academic development. Funding was also received from the Cultural Office of the NSW Premier's

Department, augmenting 1985 Scholarship Awards, assisting the Conservatorium String Orchestra to complete three concert tours in the Greater Illawarra Region. Responding as an identifiable University group, the Conservatorium accepted its first opportunity to participate in the University Open Day/Expo '85 and the Conservatorium concluded its activities with an Open Day at 'Glennifer Brae' on November 17 and a series of studio concerts during the last week of term (December 6, 7 and 8).

Equal Employment Opportunity Project

Following a 1983 requirement of the Anti-Discrimination (Amendment) Act, 1980, Universities are required to conduct research into the employment practices on campus and to propose strategies to ensure the operation of the merit principle and the elimination of any discrimination on the grounds of race, sex, marital status or physical handicap. This research and the strategies for change are to be published in the EEO Management Plan. During 1984/85 work continued on the preparation of the EEO Management Plan, due for submission in June 1985. The project fell behind schedule owing to the resignation of the EEO Co-ordinator in February 1985 and this delay was aggravated by subsequent staff changes in the EEO Unit. The new Co-ordinator, Kathy Rozmeta, took up her position in mid-September.

In the meantime, a series of campus-wide strategy development workshops was arranged. All members of the academic and general staff of the University were invited to take part. By this means it was hoped to obtain the widest possible cross section of opinion. Recommendations from these workshops provided the basis for the strategies subsequently incorporated in the draft Management Plan, completed in October. The final draft was submitted towards the end of the year.

Last year also saw the



New Co-ordinator in the Equal Opportunity Unit, Kathy Rozmeta took up her position in September

completion of a research report titled 'How Do They Rate' by two NESA (National Employment Strategies for Aborigines) trainees under the supervision of the EEO Co-ordinator. The trainees, both of whom worked in the Centre for Multicultural Studies, surveyed NSW government departments and instrumentalities to ascertain the level of progress made in increasing aboriginal employment. The report has been widely distributed.

Also during the year, EEO staff have acquainted new academic and general staff with EEO principles through the re-organised and improved induction programs introduced by Staff Office.

Further educational initiatives have included a series of seminars for members of staff to increase awareness in issues

concerning the employment of migrants, women, Aborigines and the physically handicapped. The concept has been extended to include seminars on sexual harassment, stress management and assertion training. A comprehensive training program in EEO-related knowledge and skills areas is planned for 1986. These education initiatives will form a major part of the implementation of the Management Plan in 1986, along with new procedures in recruitment, selection and promotion designed to ensure the operation of merit in employment.

Friends of the University

The Friends of the University continued to expand its activities as the University's link with the community.

Membership was 500 at the beginning of 1985 and reached 600 in September, and represents a 'Who's Who' of the region's commerce, education, government, industry, trade unions and community-oriented organisations and individuals. During the year, the staff of the Friends have consciously extended the range of their involvement in community affairs, in their role strengthening the bridge between the University and the community.

The Membership Committee changed its name to the Community Involvement Committee during the year, the better to reflect its role. A range of activities during the year

Miss Ethel Hayton and Mr Merv Nixon, both of whom became Fellows of the University during the year, are founder members of the Friends of the University



included such diverse events as visits by the W.A. Deputy Premier and the Bishop of Sale; helping to establish the local Branch of the National Trust and in conjunction with The Australian Development Assistant Bureau of the Illawarra Committee for Overseas Students; and continuing of traditional activities such as the Town v Gown Cricket Match and Senior Citizens' Day at the University; and the strengthening of more recent activities, such as the second major annual musical activity which they helped to sponsor. This, in 1985, was the production of Mozart's *Requiem* and other pieces in a Gala Concert for the University's tenth anniversary.

The Projects Committee considerably increased its membership; moved to establish a branch in Victoria; made substantial donations to the Library; and entertained expert visitors from Canada. These confirmed that the Committee's purposes and plans, if adequately supported, will lead to great benefit to the University.

The Executive Officer, while on long-service leave in England, also visited many institutions and confirmed the soundness of the directions taken in Friends and general community-relations areas.

The Friends were responsible for the University's celebrations of its tenth anniversary. Although the University chose to keep them modest, there were several important occasions—the Graduates Reunion Dinner and the Friends Gala Concert, and others that exemplified how the Friends has brought the community and University together. At its special tenth anniversary mid-year Graduation, the University created four University Fellows. All four had joined the Friends within its first six months of existence—indeed, three of them were among the first 20 members.

Again in 1985, the Friends achieved a substantial increase in activity. Much of this was due to Uniadvise, which during the year strengthened its earlier work in general consultancies and

One of the high points of the Uniadvise year was the publication of a journal describing the University research activities with which Uniadvise is involved. Copies were distributed throughout the world. The publication was acclaimed for its quality and value as a serious attempt to publicise the pure and applied research activities of the University



overseas trade promotion and moved into new areas such as seeking research funds, supporting University applications for special Commonwealth funding initiatives and the conducting of conferences.

Uniadvise

Uniadvise has operated since 1981 as the consulting arm of the University and the link between the University and the business and industrial community. Highlight of the year was undoubtedly publication of the first issue of the Uniadvise Book. Approximately 1500 copies have been distributed world-wide, giving much-deserved publicity to both the pure and applied research activities of this University. The book has been acclaimed by many of the institutions, companies and individual recipients both in Australia and overseas.

The traditional and most widely known activity of Uniadvise is consulting work. Fifty new Project Agreements were undertaken by Uniadvise in 1985. Seven contracts are still being negotiated.

Uniadvise has continued to expand its activities as a conference/seminar organiser. Four functions have been run this year and a further five conferences are in the planning

stage. The University Administration has agreed that Uniadvise assume the role of Conference Liaison Unit. After lengthy negotiations the University has reached an agreement permitting Uniadvise to negotiate and administer Research Grants. To date three grants have been made to Uniadvise.

Implementation of a Teaching Company Scheme by the Department of Industry, Technology and Commerce resulted in Uniadvise and Metal Manufacturers Ltd obtaining a first-round grant of \$90,000. This was the only grant awarded to a non-metropolitan University. Uniadvise obtained the agreement of the University to assist in the establishment of a Centre for Transport Policy Analysis. The Centre will concentrate research on transport and transport-related costs. Other activities, such as the Technical Information Facility, the Weather Station and the Patents Service have met a mixed reception and need refining to make them financially viable. Uniadvise is still expanding and the full potential will be realised only in years to come. The future offers an opportunity for growth into new ventures and consolidation of the present activities to the benefit of the University.

Student activities

Counselling Centre

The primary function of the university counselling service is the provision of help with personal problems. During 1985, 450 people came for personal counselling. The problems presented were often due to a combination of the difficulties people had in their personal lives and the stresses of studying in a university environment.

A secondary function of the counselling service is the provision of programs which aim to prevent problems occurring. Current preventative programs have focused on groups of students designated as disadvantaged.

- Each year an Introduction to University program is offered to new students. This is designed to help those from disadvantaged backgrounds to cope with the stresses of transition to university. In 1985, 410 students took part in the program.
- A career development

workshop was held for female postgraduate students. This workshop was designed to help students consolidate their career plans and develop skills in getting jobs. Assertiveness training workshops for women were also conducted on several occasions.

- Plans are being made to offer group counselling for parents of new students from ethnic backgrounds. Through this program we hope to reduce the occurrence of stressful family problems arising from the conflicting demands of disparate cultures.

The Counselling Centre organised campus interview programs for final-year students seeking graduate employment. A seminar on career planning, writing applications and attending interviews was offered in conjunction with this program.

The centre also co-ordinates the accommodation, part-time/casual employment and medical services, all of which were well utilised during 1985. Difficulties

in providing sufficient off-campus accommodation for new students were experienced at the beginning of the year.

Assistance for deaf students on campus was co-ordinated by the counselling centre. This involved assessing the needs of each and organising such assistance as the provision of notetakers.

Residential Accommodation

The Board of Management reports a successful year, with all financial commitments met. The composition of House residents in 1985 was well balanced in terms of degree specialisation and maturity (30 per cent first year, 16 per cent postgraduates/academic staff) and nationality (26 per cent overseas students) although only 41 per cent are female. It was necessary to restrict the number of exchange students from the USA to six per session in the hope that more careful selection, on basis of academic performance and maturity, will result.

Student participation in House activities is excellent and all committees and groups accept responsibility with grace and efficiency. The House Tutors' input is very pleasing and the time they give voluntarily is much appreciated. Several University staff have continued to give tutorials; Board welcomes their interest and support.

The Board notes with pleasure the contribution of the general staff. The pride taken in their work and the personal interest shown in the students do much to give the House a pleasant atmosphere.

The fee of \$65 per week compares favourably with other halls. A strict 'no frills' policy and a student population which respects property enables the Board to keep the fee below the level of the TEAS allowance.

The Union plays an important role in University life. Lunchtime rock concerts and other forms of entertainment are regular Union activities





The Sports Association is active in nearly all facets of sports. This picture shows the start of a race that takes competitors straight up the escarpment, through dense forest, to the summit 500 metres above sea level and 3.5 km from the start line

Students not in receipt of TEAS are encouraged to use the University loan scheme to meet advance payments required for Session Fees.

Sports Association

1985 has proved to be another year of expansion in numbers participating in sporting activities. With over 750 members involved in various aspects of the Recreation Program and 80 teams involved in lunchtime intramural sport, there was, however, overcrowding of many facilities. The Outdoor Recreation Program was again briefly successful with scuba-diving (beginner and advanced), waterskiing, whitewater canoeing, sailing and other courses/trips being run. University Sporting Clubs were not left behind in the upsurge of participants. New clubs formed during the year were rugby league, scuba-diving, bushwalking and rockclimbing and golf. These and the well-established clubs had major successes with rugby league, men's hockey, women's basketball, netball and snow skiing well to the fore. During the year we had one representative (Jacqui Cowderoy) at the World Student Winter Games in Belluno, Italy, and two (Marina Evans and Jo-anne Guyatt) at the Summer Games in

Kobe, Japan. We are also supplying three members of the full Australian Team to compete in the World Cup Alpine Skiing in Europe in December to February of 1986. The three are Stuart Brown, Jacqui Cowderoy and Maryanne Spiers.

The year was excellent for the Association, but the need for more and better facilities in 1986 will have to be faced up to if expansion of the Association's activities can continue.

The Union

The University of Wollongong Union is responsible for providing catering, social and cultural services to the University community. All students and staff at the University are Union members and participate in the management of the Union through annual election of representatives to the Board of Management.

The year 1985 saw the Union actively engaged in tackling many of the problems associated with rapid growth in enrolments. The opening of The Greenery in February 1985 and the active participation of the Union in planning the proposed commercial centre and the relocation of the Squash Courts to the Sports Centre site indicate that an exciting new phase of development is approaching.

Just as new initiatives are evident in the provision of physical facilities, the Union reviewed its catering services and operations and the philosophy and content of its activities. Increased emphasis was directed to serving the needs of members on campus as opposed to attracting members back to the campus for evening activities. Clubs and societies, particularly the Institute Students' Association, continued to play an important role in complementing the Union's Activities Program.

The year saw a much closer relationship between the Board of Management and the Parents' Club of the Childcare Centre (Kids' Uni.). The centre continued to provide members with quality child care at affordable rates, without government assistance. There is every indication that a close working relationship with the University will enable the Union to respond to the challenges ahead with initiative and enthusiasm; 1986 will see the opening of the commercial centre, the creation of a clubs and societies resource room, an extensive refurbishment of physical facilities, new initiatives in food services, an exciting program of activities for members, and the culmination of plans for a major development on The Greenery site.

Appendices

Buildings and Site Development

Major projects

During 1985 construction of the \$6m Engineering/Science Building Project continued. This project, the first major building for several years, was begun in September 1984 and is scheduled for completion in February 1986. Other major projects approved and funded for the current triennium include a new Administration Building, an extension to the Library and additional Student Accommodation.

Construction of the Administration Building (\$2.8m) began in October. Completion is scheduled for late 1986.

Planning for the \$4m Library extension started in mid-1985. The building is scheduled for completion during 1987.

Stage 2 of a Student Accommodation Project was completed at the end of 1985 for occupation for Session 1 1986. The Commonwealth Government contributed approximately half the cost of the \$1m project. Balance of funds came from University reserves and a loan.

Also during 1985 a \$500,000 building extension was completed to provide the minimum space necessary for the first year of the Nurse Education Program. The building was funded by the NSW State Government under the new arrangements for the educating and training of nurses in New South Wales from 1985. As the space provided was the minimum necessary for 1985 a submission has been lodged for an additional building.

The State Government is also providing funds of \$3m for the construction, on campus, of a building to house the Illawarra Technology Centre. Planning is under way. Construction is expected to be completed by February 1987.

Minor building and site development projects—1985

The 1985 Minor Works Program consisted of the following:

Stage 2—Additions to Building 23 (Stage 1 undertaken as part of 1985 Program)—to provide urgently needed additional academic offices	\$199,000
Stage 1 of a Campus Ring Road System (Stage 2 to be completed as part of 1986 Program)	121,000
Installation of necessary Air Conditioning to Computer Laboratory in Computing Science Annexe 2	4,000
Alterations to Building 28 to provide space for a Post Coronary Rehabilitation Centre within the School of Health Sciences	15,300
Upgrading of electrical switchboard in Building 22	13,200
Electrical installations associated with establishment of Micro-Computer Laboratories in Building 22	7,500
Provision of additional teaching and studio facilities for the School of Creative Arts	38,000
Supervision	26,000
	<u>\$424,000</u>

In addition, in 1985, the University funded from its own reserves a number of projects including:

Construction of a Car Park to service the Nursing Building extension	\$ 45,000
Purchase of cottage adjacent to the University to provide low cost office accommodation	\$ 66,000

University Land

Main Campus

Northfields Avenue, Gwynneville (Wollongong)
Lot 1 in Deposited Plan 113094
Area: 82.04ha
Land use: University buildings; education and research activities
All land is essential to the University's operations.

International House

Hindmarsh Avenue, Gwynneville (Wollongong)
Lot 41 in DP546239 Vol 11543 Fol. 188
Lot 42 in DP546239 Vol 11543 Fol. 189
Lot 1 in DP546474 Vol 11619 Fol. 167
Lot 13 in DP585083 Vol 13585 Fol. 56
Area: Approximately 1.2ha
Land use: students' residential college
Land is essential to University's operations.

Mt Keira Observatory

Mt Keira/Picton Road (Permissive occupancy)
Area: 1.027ha
Land use: University Observatory/Telescope building
Land is essential to the operations.

Residence for Vice-Chancellor

2 Parrish Avenue, Mt Ousley
Lot 17 DP24098
Area: 0.2023ha
Land use: Vice-Chancellor's residence
Residence required under terms of appointment.

Other Off-Campus Property

Lot 1 Porter Street, Gwynneville (Wollongong)
Certificate of Title, Reg. Book No. Vol 4945 Fol. 128
Area: 822m²
Land use: Building accommodation for University education/research activities
Land is essential to University's operations.

49 Northfields Avenue, Gwynneville (Wollongong)
Lot 6 DP36218 Vol 13318 Fol. 14
Area: 525m²
Land use: Building accommodation for University education/research activities
Land is essential to University's operations.

53 Northfields Avenue, Gwynneville (Wollongong)
Lot 4 DP36218 Vol 11029 Fol. 17
Area: 545m²
Land use: Building accommodation for University education/research activities
Land is essential to University's operations.

55 Northfields Avenue, Gwynneville (Wollongong)
Lot 3 DP36218 Vol 13318 Fol. 13
Area: 575m²
Land use: Building accommodation for University education/research activities
Land is essential to University's operations.

ENROLMENT SUMMARY 1985 — BY DEGREE, COURSE AND TYPE OF ATTENDANCE (30 APRIL 1985)

University Courses — Enrolments	Arts		Commerce		Education		Engineering		Environmental Science		Information Technology		Mathematics		Medicine		Sciences		Total	
Higher Degree (H.D.)	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P
Master's	9	27	36		6	6							2	1	3		30	15	25	
Enrolments	9	36	45		3	6	9						2	2	4		7	6	13	
Sub-total Masters	18	63	81		3	12	15						4	3	7		37	21	38	
PHD	37	34	51		4	2	4						6	4	10		53	16	29	
Sub-total PHD	74	71	102		7	6	8						10	7	17		90	37	67	
Other than Higher Degree (OTH.D.)	13	10	23		1	2	3						1	1	2		2	4	6	
Postgraduate	3	3	10		1	3	4						4	21	25		1	1	1	
Master of Science					2	7	10													
Other Masters	7	33	40		6	25	31						3	8	11		3	2	2	
Enrolments																				
Sub-total Postgrad (OTH.D.)	23	50	73		10	30	38						8	30	38		3	6	9	
Undergraduate Degrees	258	96	263		139	76	254						62	20	90		188	17	115	
Engineering																				
Enrolments																				
Sub-total Undergrad (OTH.D.)	258	96	263		139	76	254						62	20	90		188	17	115	
Enrolments																				
Sub-total Enrolments	643	463	1114		326	276	781						214	125	329		429	90	299	
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Sub-total Enrolments	643	463	1114		326	276	781						214	125	329		429	90	299	
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Sub-total Enrolments	643	463	1114		326	276	781						214	125	329		429	90	299	
Enrolments																				
Sub-total Enrolments	643	463	1114		326	276	781						214	125	329		429	90	299	
Enrolments																				
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Enrolments																				
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Enrolments																				
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Enrolments																				
Sub-total Enrolments	643	463	1114		326	276	781						214	125	329		429	90	299	
Enrolments																				
Sub-total Enrolments	643	463	1114		326	276	781						214	125	329		429	90	299	
Enrolments																				
Sub-total Enrolments	643																			

ALL STAFF AT 30 APRIL 1985

Activity and Grade/Level	Full-time			Full-time Equivalent of Part-time	Total
	M	F	T		
<i>Academic Activities</i>					
<i>Teaching and Research – Academic</i>					
– Professor	18	–	18		
– Associate Professor/Reader/Head of School	29	1	30		
– Senior Lecturer	79.5	7	86.5	21.4	
– Lecturer	109	26	135		
– Principal Tutor	5	3	8		
– Tutor/Demonstrator/Teaching Fellow	6.5	1.5	8	25.4	
Sub-Total Academic	247	38.5	285.5	46.8	332.3
General – Technical					
– Technical Officer	19	4	23		
– Technical Assistant	59.4	18	77.4		
General – Administrative	1	–	1		
– Other	12	38.8	50.8		
Sub-Total General	91.4	60.8	152.2		152.2
<i>Academic Services</i>					
<i>Teaching and Learning Centres</i>					
– Academic/Professional	0.5	–	0.5		
– Other	4	3.3	7.3		
Sub-Total	4.5	3.3	7.8		7.8
Library – Professional	7	20.1	27.1	1.1	
– Other	2	29.9	31.9	4.9	
Sub-Total	9	50	59	6	65
Computing – Professional	0.5	–	0.5		
– Other	19	3	22		
Sub-Total	19.5	3	22.5		22.5
Printing	3	4	7		7
Total Academic Services	36	60.3	96.3	6	102.3
<i>Student Services</i>					
Counselling and Accommodation	1	3	4		4
<i>General University Services</i>					
Administration – Chief Administrative Officers	5.5	–	5.5		
– Senior Administrative Officers	4	–	4		
– Administrative Officers	6	4	10		
– Administrative Assistants	14.5	3.5	18		
– Clerks, Typists, etc.	10.6	45.3	55.9		
– Other	2	–	2		
Sub-Total General	42.6	52.8	95.4		95.4
Building & Planning – Professional	2	–	2		
– Tradesmen	14	–	14		
– Other	12	3	15		
Maintenance – Maintenance of Grounds	13	1	14		
– Cleaning and Caretaking	17	8	25	27.5	
– Other	–	1.5	1.5		
Sub-Total	58	13.5	71.5	27.5	99.0
Total General University Services	100.6	66.3	166.9	27.5	194.4
<i>Independent Operations</i>					
Student Residences	–	1	1		
University Bookshop	2	1	3	1.5	
Union Staff	10	14	24	30.3	
Total Independent Operations	12	16	28	31.8	59.8
Total All Staff	488	244.9	732.9	112.1	845.0

FULL-TIME ACADEMIC STAFF

(as at 30 April 1985)

Faculty/Department/Unit	Teaching and Research									Research Only		
	Prof.	Assoc. Prof./Reader	Above Senior Lect.	Senior Lect.	Lect.	Principal Tutor	Senior Tutor	Teaching Fellow	TOTAL	Senior Lect./Lect.	Other	TOTAL
Commerce												
Accountancy and Legal Studies	1	—	—	5	7	—	—	2	15	—	—	—
Business Policy and Operations	—	—	—	1	4	—	—	—	5	—	—	—
Economics	1	—	—	6	5	1	—	1	14	—	—	—
Industrial and Administrative Studies	—	—	1	2	6	—	—	—	9	—	—	—
Sub-Total	2	—	1	14	22	1	—	3	43	—	—	—
Education	1	1	4	17	31	1	—	—	55	—	—	—
Engineering												
Civil and Mining Engineering	1	2	—	4	7	—	—	0.5	14.5	—	2	2
Electrical and Computer Engineering	1	1	—	4	3	—	—	1	10	—	1	1
Mechanical Engineering	1	—	—	3	5.5	—	—	1	10.5	—	—	—
Metallurgy	—	2	—	4	1	—	—	—	7	—	—	—
Sub-Total	3	5	—	15	16.5	—	—	2.5	42	—	3	3
Humanities												
English Language	1	—	—	1	1	—	—	—	3	—	—	—
English Literature and Drama	—	—	—	3	3	—	—	—	6	—	—	—
European Languages	1	—	—	4	1	1	—	—	7	—	1	1
History	—	1	—	4	2.5	—	—	—	7.5	—	—	—
History and Philosophy of Science	1	—	—	1	5	—	—	—	7	—	—	—
Philosophy	1	—	—	1	4	—	—	—	6	—	—	—
Sub-Total	4	1	—	14	16.5	1	—	—	36.5	—	1	1
Mathematics												
Computing Science	1	1	—	3	7	—	—	—	12	—	—	—
Mathematics	1	4	—	4.5	5	2	—	1	17.5	—	—	—
Sub-Total	2	5	—	7.5	12	2	—	1	29.5	—	—	—
Science												
Biology	1	2	—	1	3	—	—	0.5	7.5	—	—	—
Chemistry	1	4	—	2	3	—	—	1	11	—	1	1
Geology	1	2	—	—	3	1	—	—	7	—	—	—
Physics	1	—	—	4	3	—	—	—	8	1	—	1
Sub-Total	4	8	—	7	12	1	—	1.5	33.5	1	1	2
Social Sciences												
Centre for Multicultural Studies	—	—	—	—	—	—	—	—	—	2	—	2
Geography	1	2	—	3	1	—	—	—	7	—	—	—
Psychology	—	1	—	2	6	2	—	—	11	—	—	—
Sociology	1	—	—	2	4	—	—	—	7	—	—	—
Sub-Total	2	3	—	7	11	2	—	—	25	2	—	2
Creative Arts	—	—	2	3	10	—	—	—	15	—	—	—
Health Sciences	—	—	1	3	13	—	—	—	17	—	—	—
TOTAL	18	23	7	86.5	135	8	—	8	285.5	3	5	8

The financial statements printed in the Annual Report represent the financial statements for the year ended 31 December, 1985, as submitted to the Auditor-General for certification.

The certified financial statements were not available at the time of publication of this report (April 2). The Auditor-General's Report and the Certified Financial Statements will be forwarded to the Minister at a later date.

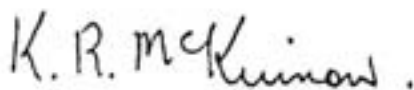
The University of Wollongong ANNUAL REPORT 1985 FINANCIAL STATEMENTS

STATEMENT BY MEMBERS OF THE COUNCIL

Pursuant to Section 41B(1)(f) of the Public Finance and Audit Act, 1983, and in accordance with a resolution of the members of the Council, we declare on behalf of the Council of The University of Wollongong that in our opinion:

1. The accompanying financial statements exhibit a true and fair view of the financial position of The University of Wollongong as at 31 December, 1985, and transactions for the year then ended.
2. The statements have been prepared in accordance with the provisions of the Public Finance and Audit Act, 1983, and the Public Finance and Audit (Statutory Bodies) Regulation, 1985.

Further, we are not aware of any circumstances which would render any particulars included in the financial statements to be misleading or inaccurate.



VICE-CHANCELLOR



DEPUTY CHANCELLOR

Date: 7th February, 1986.

STATEMENT OF BALANCES (ALL FUNDS) AT 31 DECEMBER, 1985

1984 \$		1985 \$
Accumulated Funds		
	General Recurrent Fund as per	
470,439 DR	Annexure A	430,666 DR
	Basic Nurse Education Grant as per	
124,179	Annexure C	144,792 DR
291,800	Equipment Grant as per Annexure F	69,541
15,740	Research Grant as per Annexure G	—
	Special Purpose Funds (Research) as per	
487,106	Annexure H	541,534
	Other Special Purpose Funds as per	
2,563,269	Annexure I	3,297,650
166,548 DR	Building Projects Grant as per Annexure E	348,147 DR
	Student Residential System as per	
330,499 DR	Annexure J	1,036,768 DR
161,424 DR	International House as per Annexure L	127,539 DR
<u>52,333,184</u>		<u>51,820,813</u>
Represented by:		
Long Term Investments		
	Government and Semi-Government	
	Securities (Note 18)	
1,906,190	— quoted	1,906,190
659,290	— unquoted	459,290
1,430,380	Term Deposits (Note 18)	2,980,807
<u>3,995,860</u>		<u>5,346,287</u>
Non-Current Assets		
76,425	Loans to Staff (Note 15)	138,860
Current Assets		
16,410	Cash on hand	17,430
	Government and Semi-Government	
700,000	Securities — unquoted (Note 18)	200,000
—	Short Term Deposits (Note 18)	9,700,000
757,248	Debtors	586,218
—	Less Provision for Doubtful Debts	10,095
—	Prepayments	576,123
—	Accrued Income	141,432
302,338	Sundry Advances	350,776
60,775	Stores Inventory (Note 11)	195,062
<u>11,098,080</u>		<u>78,867</u>
<u>15,170,365</u>		<u>11,259,690</u>
		<u>16,744,837</u>
Less Current Liabilities		
1,116,885	Cash Book Balance	821,253
1,416,760	Creditors and Accrued Expenses	1,155,124
	Government Grants received in advance	
7,277,500	(Note 13)	8,429,261
47,640	Secured Loans (Note 11)	292,140
<u>9,858,785</u>		<u>10,697,778</u>
<u>5,311,580</u>		<u>6,047,059</u>
Less Long Term Liabilities and Provisions		
185,579	Secured Loans (Note 11)	1,171,546
	Provision for Long Service Leave	
	(Note 14)(ii)	
	Estimated Liability at 31/12/85	3,939,820
962,464	Less Amount Unprovided	3,202,691
	Provision for State Superannuation	
	Pension Subsidy (Note 14)(iii)	
	Estimated Liability at 31/12/85	37,657,084
1,111,242	Less Amount Unprovided	36,227,322
	Provision for Professional Superannuation	
648,640	Scheme (Note 14)(ii)	775,748
	Provision for Major Repairs and	
70,471	Replacement	112,061
<u>2,978,396</u>		<u>4,226,246</u>
<u>52,333,184</u>		<u>51,820,813</u>

The Statement of Balances is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

**STATEMENT OF SOURCES AND APPLICATIONS OF FUNDS
FOR THE YEAR ENDED 31 DECEMBER, 1985**

1984 \$		1985 \$
	Sources of Funds	
	Funds from Operations (A)	
35,360,692	Inflows of Funds from Operations	45,062,808
34,456,072	Less Outflows of Funds from Operations	44,192,438
<u>904,620</u>		<u>870,370</u>
	Reduction in Assets	
	Current Assets	
—	Government and Semi-Government Securities	500,000
8,074	Debtors	171,030
8,555	Sundry Advances	107,276
<u>16,629</u>		<u>778,306</u>
	Increase in Liabilities	
	Current Liabilities	
387,036	Cash Book Balance	—
675,661	Creditors and Accrued Expenses	—
1,188,500	Government Grants Received in Advance	1,151,761
—	Secured Loans	244,500
<u>2,251,197</u>		<u>1,396,261</u>
	Non-Current Liabilities	
—	Secured Loans	985,967
<u>\$3,172,446</u>	Total Sources of Funds	<u>\$4,030,904</u>
	Application of Funds	
	Increase in Assets	
	Current Assets	
1,900	Cash on Hand	1,020
700,000	Semi-Government Securities	—
262,358	Short Term Deposits	438,691
—	Prepayments	141,432
—	Accrued Income	350,776
968	Stock	18,092
<u>965,226</u>		<u>950,011</u>
	Non Current Assets	
1,506,190	Investments	1,350,427
46,425	Loans to Staff	62,435
<u>1,552,615</u>		<u>1,412,862</u>
	Reduction in Liabilities	
	Current Liabilities	
—	Bank Overdraft	295,632
—	Creditors and Accrued Expenses	261,636
—		<u>557,268</u>
	Non-Current Liabilities	
15,781	Secured Loans	—
382,661	Long Service Leave Paid	605,806
189,053	State Superannuation Paid	435,826
23,842	Professorial Pensions Paid	40,721
43,268	Major Repairs and Replacements Paid	28,410
<u>638,824</u>		<u>1,110,763</u>
<u>\$3,172,446</u>	Total Application of Funds	<u>\$4,030,904</u>
	(A) NOTES: Reconciliation of Funds from Operations with Deficit for Year:	
904,620	Funds from Operations	870,370
	Less:	
381,946	Interest Received on Provisions	546,072
4,062	Employee Contributions to Professorial Superannuation Provisions	5,675
—	— Doubtful Debts	10,095
195,420	— Long Service Leave	201,495
20,000	— Major Repairs and Replacements	70,000
38,993	— Professorial Superannuation	43,722
311,300	— State Superannuation	505,682
<u>951,721</u>		<u>1,382,741</u>
<u>\$47,101</u>	Reduction in Accumulated Funds	<u>\$512,371</u>

The Statement of Sources and Applications of Funds is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE A

GENERAL RECURRENT FUND
STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER, 1985

1984 \$	Note	1985 \$
Income		
26,038,408	Commonwealth Government Grants	30,373,800
177,242	Miscellaneous	179,773
406,023	Transfer from Special Purpose Account	241,590
<u>26,621,673</u>		<u>30,795,163</u>
Expenditure		
15,904,507	Academic Activities 2	18,265,033
3,191,386	Academic Services 3	3,612,470
389,965	Student Services 4	416,545
6,871,864	General University Services 5	8,228,732
271,980	Public Services	161,390
<u>26,629,702</u>		<u>30,684,170</u>
8,029 DR	Surplus for Year	110,993
29,165 DR	Less - Conservatorium of Music - Deficit (Annexure B)	58,256
<u>37,194 DR</u>		<u>52,737</u>
9,023	Less - Adjustments for Prior Years	12,964
<u>28,171 DR</u>		<u>39,773</u>
442,268	Accumulated Deficiency at 1 January, 1985	470,439
<u>\$470,439</u>	Deficiency at 31 December, 1985	<u>\$430,666</u>

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE B

WOLLONGONG CONSERVATORIUM OF MUSIC
STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER, 1985

1984 \$		1985 \$
Income		
41,500	State Government Grant	83,000
107,842	Fees	189,840
988	Concerts	-
1,408	Miscellaneous	353
<u>151,738</u>		<u>273,193</u>
Expenditure		
153,996	Salaries and Associated Charges	289,334
5,068	Maintenance	9,437
18,503	Overheads (postage, telephone, electricity and cleaning)	32,388
3,336	Concerts	290
<u>180,903</u>		<u>331,449</u>
<u>\$29,165</u>	Deficit for Year	<u>\$58,256</u>

NOTE: The deficit for the Conservatorium of Music has been funded by General Recurrent Funds - refer Annexure A.

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE C

BASIC NURSE EDUCATION GRANT
STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER, 1985

1984 \$	Note	1985 \$
Income		
166,260	State Government Grant	650,555
Expenditure		
17,634	Salaries	482,547
1,164	Salary Related Costs	39,340
399	Stores and Consumables	100,661
6,622	Library Books and Periodicals	23,272
641	Furniture and Equipment	220,104
—	Overheads	49,829
15,621	Other	3,773
42,081		919,526
124,179 CR	Deficit for Year	268,971
—	Accumulated Funds at 1 January, 1985	124,179
\$124,179 CR	Deficiency at 31 December, 1985	\$144,792

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE D

MINOR BUILDING PROJECT GRANT
STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER, 1985

1984 \$		1985 \$
Income		
510,000	Commonwealth Government Grant	424,000
Expenditure		
510,000	Minor Building Projects, etc.	424,000
NIL	Accumulated Funds at 31 December, 1985	NIL

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE E

BUILDING PROJECTS GRANT
STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER, 1985

1984 \$		1985 \$
Income		
625,000	Commonwealth Government Grant	4,508,000
Expenditure		
31,553	Administrative Building	492,825
—	Library Extensions	62,381
779,995	Science Engineering Building	4,114,393
811,548		4,669,599
186,548	Excess Expenditure Over Income	161,599
—	Accumulated Deficiency at 1 January, 1985	186,548
\$196,548	Deficiency at 31 December, 1985	\$348,147

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE F

SPECIAL EQUIPMENT GRANT
STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER, 1985

1984 \$		1985 \$
	Income	
1,265,000	Commonwealth Government Grant	1,353,000
	Expenditure	
983,835	New Equipment	632,781
15,481	Replacement Equipment	11,450
190,024	Computing	931,028
1,189,340		1,575,259
75,660 CR	Deficit for Year	222,259
216,140	Accumulated Balance at 1 January, 1985	291,800
5291,800	Accumulated Balance at 31 December, 1985	569,541

NOTE: The accumulated balance is held for payment of commitments outstanding at year end.

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE G

SPECIAL RESEARCH GRANT
STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER, 1985

1984 \$		1985 \$
	Income	
257,000	Commonwealth Government Grant	304,000
	Expenditure	
89,058	Salaries and Associated Charges	197,806
151,517	Maintenance (materials, etc.)	121,934
685	Research Publications, Books and Periodicals	—
241,260		319,740
15,740 CR	Excess Expenditure Over Income	15,740
—	Accumulated Balance 1 January, 1985	15,740
\$15,740	Accumulated Balance 31 December, 1985	NIL

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE H

SPECIAL PURPOSE FUNDS (RESEARCH)
STATEMENT OF RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 31 DECEMBER, 1985

	Balance at 1 Jan. 1985 \$	Receipts \$	Payments \$	Balance at 31 Dec. 1985 \$
Australian Research Grants Scheme	78,550	233,762	235,804	76,508
National Energy Research, Development and Demonstration Council	53,306 DR	253,860	254,044	53,490 DR*
Other Grants and Donations	461,862	839,793	783,139	518,516
	\$ 487,106	1,327,415	1,272,987	541,534

*NOTE: These Grants are funded on a retrospective basis.

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE I

OTHER SPECIAL PURPOSE FUNDS
STATEMENT OF RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 31 DECEMBER, 1985

	Balance at 1 Jan. 1985	Receipts	Payments	Balance at 31 Dec. 1985
	\$	\$	\$	\$
Scholarships, Bursaries and Prizes	20,536	98,262	77,740	41,058
Special Services Appropriation Account	347,252	491,273	241,590	596,935
General Development Account	1,092,941	750,591	1,125,900	717,632
Professional Superannuation and Pension Scheme				
Managed Funds Accounts	80,104	42,502	—	122,606
Widows Annuity Accumulation Fund	44,039	21,955	2,598	63,396
General	961,295	3,696,004	3,012,995	1,644,304
Trust and Working Accounts	17,102	98,385	3,768	111,719
	<u>\$ 2,563,269</u>	<u>5,198,972</u>	<u>4,464,591</u>	<u>3,297,650</u>

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE J

STUDENT RESIDENTIAL SYSTEM—KOOLOOBONG
INCOME AND EXPENDITURE STATEMENT FOR YEAR ENDED 31 DECEMBER, 1985

	Note	\$
Income		
Residential Fees		90,793
Transfer from Recurrent Funds		20,676
Transfer from General Development Account		16,315
		<u>127,784</u>
Expenditure		
Loan Interest and Charges		107,633
Materials		2,338
Salaries and Associated Charges		17,809
Travel		4
		<u>127,784</u>
Balance at 31 December, 1985		—
Add: Building Deficit (Annexure K)		1,036,768
Accumulated Deficiency at 31 December, 1985	7	<u>\$1,036,768</u>

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE K

STUDENT RESIDENTIAL SYSTEM (BUILDING PROJECT)
INCOME AND EXPENDITURE STATEMENT FOR YEAR ENDED 31 DECEMBER, 1985

1984 \$		Note	1985 \$
	Income		
—	Commonwealth Grant		518,000
350,000	Transfer from General Development Account		—
100,000	Transfer from Recurrent Funds		—
<u>450,000</u>			<u>518,000</u>
	Expenditure		
780,499	Student Accommodation Stage I		466,189
—	Student Accommodation Stage II		758,080
<u>780,499</u>			<u>1,224,269</u>
330,499	Excess Expenditure Over Income		706,269
—	Accumulated Deficiency at 1 January, 1985		330,499
<u>\$330,449</u>	Accumulated Deficiency at 31 December, 1985	7	<u>\$1,036,768</u>

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

ANNEXURE L

INTERNATIONAL HOUSE
INCOME AND EXPENDITURE STATEMENT FOR THE YEAR ENDED 31 DECEMBER, 1985

1984 \$		1985 \$
	Income	
49,400	Commonwealth Government Grant	34,400
400,019	Residential Fees	436,778
70,406	Other	136,483
<u>519,825</u>		<u>607,661</u>
	Expenditure	
130,803	Administration	150,714
137,532	Cleaning and Maintenance	133,978
164,717	Catering	180,442
29,902	Loan Interest and Charges	36,777
3,885	Provision for Long Service Leave	1,865
20,000	Provision for Major Repairs and Replacements	70,000
<u>486,839</u>		<u>573,776</u>
32,986	Surplus for Year	33,885
700	Add: Adjustment for Prior Period	—
<u>33,686</u>		<u>33,885</u>
195,110	Accumulated Deficiency at 1 January, 1985	161,424
<u>\$161,424</u>	Deficiency at 31 December, 1985	<u>\$127,539</u>

This statement is to be read in conjunction with the notes to and forming part of the accounts on pages 60 to 64.

**NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER, 1985**

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

- (a) Except for Stores Stock, the accounts of the University have been prepared in accordance with the historical cost convention and have not been adjusted to take account of current costs.
- (b) (i) In accordance with Section 41B(2) of the Public Finance and Audit Act 1983 and the Public Finance and Audit (Statutory Bodies) Regulation 1985, approval has been granted to prepare financial statements on a modified accrual basis as the University, in line with general practice within the tertiary education sphere, does not capitalise assets and therefore does not charge depreciation in its accounts.
- In relation to all funds, the amounts payable for salaries between the last payday for the year and 31 December, and for goods and services received prior to 31 December, are charged as an expense for the year.
- Income due, including interest earnings, is brought to account in the year to which it applies.
- (ii) Exemption has also been granted in accordance with the provisions of the Act to dispense with the preparation and inclusion of consolidated accounts in the financial statements of the University. Separate reports are prepared on behalf of the subsidiaries and it is considered that no greater disclosure is achieved through consolidating their accounts with those of the University and that the results of consolidation could be misleading.
- Separate reports are available in respect of the Friends of the University of Wollongong Ltd and the Illawarra Technology Centre Ltd. The Automation and Engineering Applications Centre Ltd was incorporated on 24 October 1985. No reports have yet been prepared in respect of this company. The latest report of the Friends of the University of Wollongong Ltd for the year ended 31 December 1985 showed a deficit for the year from operations of \$17,092 (1984 \$14,255). The Illawarra Technology Centre Ltd was incorporated on 31 January 1985. At balance date on 30 June 1985 the financial statements of the company showed no surplus or deficit from operations for the period then ended. The University has no other subsidiaries.
- (c) With the exception of Stores Stock, monetary assets only are carried forward in the Statement of Balances. Other non-monetary assets are written off in the year of purchase against the relevant fund.
- (d) Stock holdings in the University's Central Store were valued using the most recent purchase price as cost for each item. This is a departure from accounting standard AAS2 in relation to the Valuation and Presentation of Inventories in the context of the Historical Cost System but the amount involved is not considered to be material.
- (e) The financial statements have been prepared to comply in all material respects with the Australian Accounting Standards where they have been found to be applicable to the University.
- (f) The following change has occurred in the University's accounting policies during the financial year: For the first time, interest receivable on investments to 31 December has been accrued. This change in policy has temporarily increased income for the year, the monetary effect being the total interest accrued of \$318,767.

2. ACADEMIC ACTIVITIES

Teaching and Research

	1985	1984
	\$	\$
Salaries	14,415,956	12,604,137
Salary Related Costs	2,122,782	1,941,567
Maintenance	1,033,192	877,009
Equipment	125,877	—
Conference and Study Leave	123,837	140,139
New Appointment Expenses	154,460	72,753
Other	5,304	8,481
TOTAL Teaching and Research	17,981,408	15,644,086

Research Only

Salaries	199,682	195,611
Salary Related Costs	28,018	11,507
Maintenance	55,925	53,169
Equipment	—	134
Other	—	—
TOTAL Research	283,625	260,421
TOTAL ACADEMIC ACTIVITIES	\$18,265,033	15,904,507

3. ACADEMIC SERVICES

Library

Salaries	1,331,687	1,260,650
Salary Related Costs	193,210	137,113
Purchase of Books, Periodicals etc.	827,082	690,288
Maintenance	127,484	109,094
Other	8,167	4,754
TOTAL Library	2,487,630	2,201,899

Computing

Salaries	464,919	388,331
Salary Related Costs	41,201	38,101
Supplies	68,367	58,962
Maintenance	166,664	130,457
Equipment	—	598
Other	4,225	2,244
TOTAL Computing	745,376	618,693

Other Academic Services

Education Resources Centre	194,978	151,311
Scientific Workshop	62,039	104,818
Printery	122,447	114,665
TOTAL Other Academic Services	379,464	370,794
TOTAL ACADEMIC SERVICES	\$3,612,470	\$3,191,386

4. STUDENT SERVICES

Health Services	463	338
Counselling	113,469	99,794
Scholarships	136,088	130,034
Union/Sports Association	161,525	154,799
Other	5,000	5,000
TOTAL STUDENT SERVICES	\$416,545	\$389,965

5. GENERAL UNIVERSITY SERVICES

Administration

Salaries	2,501,671	2,269,555
Salary Related Costs	440,724	496,076
Maintenance	332,641	166,156
Equipment	5,539	673
Travel	20,205	36,777
Other	291,333	151,599
TOTAL Administration	3,592,113	3,120,836

Overheads

Postage	169,610	146,565
Telephones	268,574	218,054
Advertising	116,675	82,436
Insurance	109,024	96,377
Contributions	364,757	128,123
Furniture	162,311	69,115
Power, Lighting and Heating	582,648	506,592
Publications	147,837	88,485
Audit Fees	28,000	22,000
Other	157,505	113,390
TOTAL Overheads	2,106,941	1,471,137

Building and Grounds

Salaries	1,862,442	1,653,782
Salary Related Costs	252,524	192,451
Materials	338,395	382,682
Water and General Rates	73,874	50,969
Other	2,443	7
TOTAL Building and Grounds	2,529,678	2,279,891
TOTAL GENERAL UNIVERSITY SERVICES	\$8,228,732	\$6,871,864

6. SCHOOL OF NURSING

In 1984, the N.S.W. Government provided funds for "set up", development, preparation and accreditation of Nurse Education of which \$124,179 was carried forward and expended in the 1985 year. In 1985, the University received a further grant of \$3,650 for this purpose.

In 1985, the University also received grants of \$597,201 for recurrent purposes and \$48,438 for equipment. A further sum of \$1,266 was accrued being supplementation to the recurrent grant. The deficit of \$144,792 at 31 December, 1985 is to be funded from grants received in subsequent years.

7. STUDENT RESIDENTIAL SYSTEM

During the year ended 31 December, 1985 the first stage of the Student Residential System was completed and construction of the second stage commenced. During 1985, the project was funded by a Commonwealth Government Grant of \$518,000 in respect of Stage II and by loans of \$700,000 and \$500,000 from the Commonwealth Trading Bank and National Australia Bank respectively.

8. INVESTMENT INTEREST

During the year ended 31 December, 1985, total interest received on investments amounted to \$1,632,515 (1984 \$1,189,203). In addition the sum of \$318,767 interest receivable on investments was accrued, giving a total of \$1,951,282 for the 1985 year.

9. AUDIT FEE

The total amount paid to the Auditor-General for auditing services for 1985 was \$28,000 (1984 \$22,000).

10. INTEREST PAID

The total amount of interest paid, or due and payable on loans for the 1985 year was \$136,619 (1984 \$31,859).

11. SECURED LOANS

- (i) Loans due later than 1 year but not later than 2 years

State Bank of New South Wales

This loan is secured by way of a first mortgage over the property at 2 Parrish Avenue, Mt. Pleasant.

- (ii) Loans due later than 5 years

Commonwealth Trading Bank Loan No. 1

Commonwealth Trading Bank Loan No. 2

Commonwealth Trading Bank Loan No. 3

National Australia Bank

The Commonwealth Trading Bank loans are secured by way of a first mortgage over the property known as International House. Loan No. 3 was used to pay the outstanding balance on the loan from Westpac Banking Corporation.

Loan numbers 1 and 2 and the National Australia Bank loan were used to finance construction of the Student Residential System. The National Australia Bank loan is secured by way of a second mortgage over the International House property.

	1985	1984
	\$	\$
Current Liability		
Commonwealth Trading Bank Loan No. 1	123,360	—
Commonwealth Trading Bank Loan No. 2	20,040	—
Commonwealth Trading Bank Loan No. 3	42,480	—
National Australia Bank	97,260	—
State Bank of New South Wales	9,000	9,000
Westpac Banking Corporation	—	38,640
	<u>292,140</u>	<u>47,640</u>
Non-Current Liability		
Commonwealth Trading Bank Loan No. 1	507,220	—
Commonwealth Trading Bank Loan No. 2	81,068	—
Commonwealth Trading Bank Loan No. 3	174,451	—
National Australia Bank	403,802	—
State Bank of New South Wales	5,005	12,712
Westpac Banking Corporation	—	172,867
	<u>1,171,546</u>	<u>185,579</u>
Total Secured Loans	<u>\$1,463,686</u>	<u>\$233,219</u>

12. CONTINGENT LIABILITIES

- (i) As at 31 December, 1985, outstanding Loan Guarantees provided by the University under the University of Wollongong Staff Members Housing Loans Scheme with The National Australia Bank totalled \$51,200 (1984 \$37,000).

13. GOVERNMENT GRANTS RECEIVED IN ADVANCE

In December 1985 an amount of \$8,429,261 was received as an advance against 1986 Australian Government Grants to the University.

14. PROVISIONS FOR DEFERRED EMPLOYEE ENTITLEMENTS

(i) Professorsial Superannuation Scheme

The provision for Professorsial Superannuation Scheme was established to provide members with a pension of up to 25% of salary on retirement. During 1985, the provision received the benefit of \$118,431 (1984 \$77,509) interest earnings from investments and a contribution of \$43,722 (1984 \$38,993) from General Recurrent Fund. In 1984 the Professorsial Superannuation Scheme was amended to provide for the payment of an additional contributory pension to members of the scheme on retirement. Members electing to exercise the option contributed a further \$5,675 to the provision in 1985. Payments during the year amounted to \$40,720 leaving a balance at 31 December, 1985, of \$775,748 (1984 \$648,640). Arrangements have been made for an Actuarial review of the University's liability under the scheme in 1986.

(ii) Long Service Leave

During the year, the amount set aside for long service leave totalled \$201,495 (1984 \$195,420). Interest earnings credited during the year totalled \$178,976 (1984 \$148,778). Payments during the year amounted to \$605,806 (1984 \$382,661) leaving a balance at 31 December, 1985 of \$737,129 (1984 \$962,464).

The accrued long service leave liability in respect of employees with ten or more years' service at that date is estimated at \$3,939,820 (1984 \$3,487,060).

(iii) State Superannuation Fund

The University contributes to the New South Wales State Superannuation Fund in respect of present and former members of staff who are, or were, members of the Fund. In a report dated 28 August, 1985 the Government Actuary assessed the accrued liability of the University based on membership of the Fund at 30 June, 1984. The net unfunded past service cost at 31 December, 1984 was \$31.14 million. The net unfunded past service cost at 31 December, 1985, in accordance with a formula provided by the Actuary, was \$36.23 millions. Assumptions adopted by the Actuary in determining the University's liability were:

Growth of salaries	10.5% per annum
Indexation increases in pensions	10% per annum
Interest earnings on assets	12% per annum

As a result of the high correlation between rates of interest, rates of inflation and rates of salary growth, the Actuary expected that moderate changes in the absolute levels of the rates would not produce markedly different results.

A number of minor changes to the scheme came into effect from 1 July, 1985. However, the Government Actuary advises that it does not appear that these changes will dictate acceleration of the next actuarial review which is due as at 31 December, 1987.

During the year, the provision received the benefit of \$248,665 (1984 \$155,659) interest earnings from investments and a contribution of \$505,682 (1984 \$311,300) from General Recurrent Fund. Payments during the year amounted to \$435,826 (1984 \$189,053) leaving a balance at 31 December 1985 of \$1,429,762 (1984 \$1,111,242).

(iv) Annual Leave

The University has an undetermined liability for untaken annual leave. Payments for leave taken in-service or on termination are charged to current revenue.

15. LOANS TO STAFF

In 1984 the University established a Housing Loan Scheme for staff at professorsial level with a maximum loan available of \$30,000. Outstanding loans at 31 December, 1985 amounted to \$138,860.

16. CAPITAL PROJECTS

At 31 December, 1985, the following capital projects had been contracted for, on the basis that funds would be made available under Commonwealth Legislative provisions during 1986 and 1987.

Administrative Building	2,726,536
Science Engineering Building	1,439,831
Construction of Ring Road	104,122
Student Residential System	235,518
	<u>\$4,506,007</u>

17. LEASE OR HIRE EXPENDITURE

Contracts for lease or hire expenditure which are payable during 1986 are estimated at \$129,438 as at 31 December, 1985, detailed as follows:

Photocopying machines	<u>\$129,438</u>
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18. INVESTMENTS

Investments consisting of Government and Semi-Government Securities and term deposits are shown in the Statement of Balances at book value which is acquisition cost as adjusted for interest bought.

Summary of portfolio as at 31 December, 1985

	Face Value	Book Value	Market Value
Government and Semi-Government Securities			
— Quoted	2,000,000	1,906,190	1,870,800
— Unquoted	700,000	659,290	—
Term Deposits	12,653,000	12,680,807	—
	<u>15,353,000</u>	<u>15,246,287</u>	

Grants and Donations

Australian Research Grants Scheme Projects

Electrical and Computer Engineering	\$
Dr F. J. Paoloni	
Swept Frequency Microwave Tomographic Imaging	8,300
Metallurgy	
Assoc. Prof. N. Kennon and Dr D. Dunne	
Properties and Applications of Shape Memory Alloys	19,000
English	
Mr W. D. McGaw	
An Oxford English Texts Edition of the Poems of Henry Howard Earl of Surrey	15,500
European Languages	
Dr G. Ianziti	
The Writing of History as Political Propaganda in Renaissance Italy	700
Biology	
Prof A. D. Brown and Dr R. M. Lilley	
Osmoregulation in Halotolerant Algae	30,600
Dr A. J. Hulbert	
Studies of the Evolution of Mammalian Endothermy	17,850
Dr R. M. Lilley	
Metabolite Levels in the Cytosol and Mitochondria of Plant Leaf Cells	12,300
Dr R. J. Whelan	
Competition among Plants for Pollination	15,300
Chemistry	
Dr P. G. Burton	
Quantitative Modelling of Molecular Structure and Behaviour	17,800
Prof L. Kane-Maguire	
Nucleophilic attack upon Co-ordinated Hydrocarbons - Mechanistic Studies and Approaches to Asymmetric Synthesis	38,197
Geology and Chemistry	
Dr A. C. Hutton, Prof A. C. Cook, Dr J. Ellis, and Dr P. T. Crisp	
Investigations of the Mechanisms of Oil Shale Pyrolysis	16,800
Physics	
Prof P. Fisher, Dr C. A. Freeth, Dr A. D. Martin, and Dr P. E. Simmons	
Electronic and Vibrational Spectra of Solids	32,098
Economics and Geography	
Dr J. Mangan, Dr J. Guest, and Dr R. Robinson	
Structural Change in a Steel City: Local and Nationwide Impacts and Policy Responses	13,000
Psychology	
Dr R. F. Henry	
Developmental Implications of Child-rearing within the Family System	11,300

National Energy Research Development and Demonstration Council

	\$
Coal Storing Bin Design (Mechanical Engineering)	8,918
Electrostatic Precipitators (Electrical Engineering)	9,131
Feeding of Coal from Mass Flow Hopper Outlets (Mechanical Engineering)	38,055
Gas Drainage from Underground Coal Seam (Civil Engineering)	57,096
Pneumatic Conveying of Coal (Mechanical Engineering)	139,505
Reflectance of Oriented Vitrinite (Geology)	11,991

Special Purpose Funds (Research)

Civil Engineering	
Postgraduate Account	1,000
Research and Development in Mining Engineering	12,265
A.D.A.B. - Geotechnical Data Bank	309
Gas Diffusion in Coal Seams	4,629
Australian Welding Research Association	400
Electrical and Computer Engineering	
Postgraduate Account	1,000
N.S.W. Electricity Commission - Electro Precipitation	800
Sundry Donations	7,543
Australian Computer Research Board -	
Dr R. Russell	3,475
Dr C. Cook	1,200
Australian Telecommunication and Electronics Research Board -	
Dr F. Paoloni	2,025
Dr T. Ng	2,250
Mechanical Engineering	
Postgraduate Account	1,000
Bulk Solids Handling	9,283
Mechanical Engineering Research and Development	4,731
Rheem Australia - Commercial Solar Project	11,976
Electrical Research Board -	
Prof P. Arnold and	
Dr A. G. McLean	41,098
Metallurgy	
Postgraduate Account	2,000
Sundry Donations	937
Australian Iron & Steel - Prof N. Standish	9,589
- Research Award	14,291
A.D.A.B. - N. Standish	8,655
English Literature & Drama	
Postgraduate Account	500
European Languages	
Postgraduate Account	500
History	
Postgraduate Account	1,000
History of Nursing	2,690
History of Churches of the Illawarra	5,409
Rural Credits Development Fund - Prof J. Hagan	2,062

History and Philosophy of Science		Economics	
Postgraduate Account	2,000	Postgraduate Account	2,000
Sundry Donations	13,959	Reserve Bank	
Consultancy Account — Prof R. Johnston	6,500	— Economic and Financial Research Fund — Dr D. Lewis	8,216
School of Creative Arts		Business Policy & Operations	
Postgraduate Account	500	Reserve Bank	
Mathematics		— Economic and Financial Research Fund — Mr G. Manger	5,000
Postgraduate Account	500	Education	
Oceanographic Research	800	Postgraduate Account	500
Computing Science		Bourke Pre-School Research and Support	2,500
Radio Research Board Travel Grant — M. Wagner	662	Advanced Education Research	146
Biology		Sports Science Research Program	1,000
Postgraduate Account	750	Research Account — G. Kilaar	252
Special Research Account	4,854	Australia/United States Education Project	20,000
Hippocampal Spike Research — Dr H. Spencer	2,150	NSW Dept of Education — Dr E. Booth	21,636
Amino Acid Research — Dr D. Murray	1,500	NSW Dept of Education — Postgraduate Program	20,000
Special Research Fund — Dr R. Whelan	577	Education Development Study — Dr P. de Lacey	262
Photosynthesis Research — Dr R. Lilley	3,716	NSW Dept of Education — Dr B. Cambourne	8,880
India/Australia Science Agreement — Dr D. Murray	3,000	Centre for Technology and Social Change	
Linnean Society	360	Ministry of Employment — Victoria	8,330
Chemistry		Industrial Democracy Project	11,050
Postgraduate Account	1,000	Dept of Science and Technology	67,482
Sundry Donations	5,555	ATDAF	6,548
Auto Monitor and Forward Feed	6,687	High Technology Indicators	49,573
Aerosol Research Fund	170	Sigma Engineering	2,850
Geology		TASC/UNESCO — BRU Video	1,426
Postgraduate Account	3,500		
Geology Fuel Research	2,525	Special Purpose Funds (Scholarship, Bursaries, Prizes)	
General Donations	6,703	ADAB Postgraduate Award — Geology	2,906
X.R.D. Research Fund	69	Aboriginal Scholarship	1,508
Industrial Minerals Research	225	Australasian Welding Research Association	
Geology and Petrophysics Research	900	Post Graduation Scholarship: Chemistry	2,616
Physics		Metallurgy	7,000
Sundry Donations	1,840	Australian Institute of Management	600
Geography		Australian Institute of Metals (Port Kembla)	130
Postgraduate Account	1,500	Australian Psychological Society Prize — Psychology	100
Environmental Research Donations	1,921	Australian Society of Accountants Prize — Accountancy	300
Population Research	3,309	Peter Beckmann Memorial Prize in Physical Chemistry	78
Lake Illawarra Sediment Study	60	Biology Prize	92
River Resources and Planning	2,000	Clothing & Allied Trade Union Scholarship (History)	15,116
Office of the Supervisory Scientist—Study of the Alligator River Region	24,000	Darryl Condon Memorial Prize	35
Psychology		Alex Clarke Scholarship	686
Postgraduate Account	1,750	Commonwealth Banking Corporation Prize	20
Assoc Prof L. L. Viney Research Fund	3,000	Evan Phillips Memorial Prize	355
Dept of Health — Assoc Prof L. L. Viney	32,714	Foundation Prize in Geology	107
Attribution Research	800	Bert Halpern Memorial Prize	246
Sociology		Illawarra County Council Award	1,500
Postgraduate Account	1,000	Illawarra County Council Award Conservatorium	750
UNESCO — Literature Search	6,500	Austin Keane Memorial Prize	140
Special Research — Dr A. Jakubowicz	615	Sam Marshall Memorial Prize	125
Special Research — Dr T. Jagtenberg	1,000	Mathematics Prize Fund	217
Centre for Multicultural Studies		Richard Miller (Computing Science)	20,739
Dept of Immigration and Ethnic Affairs		Miscellaneous Workers Union Postgraduate Award (History)	7,616
— Language Attitude Survey	2,500	New South Wales Govt Cultural Grant (Conservatorium)	1,866
— AMEP Projects 2 & 3	42,730	Otway Source — Rock Studies Geology Prize	7,500
— AMEP Project 4	10,500	Quotarian Scholarship	200
— AMEP Project 5	19,684	Arthur Raymond Management Prize Fund	52
— Western Sydney Community Development Study	14,945	Gina Savage Prize (Faculty of Science)	100
Dept of Employment and Industrial Relations		NSW Teachers' Federation Postgraduate Award	8,927
— Industrial Democracy Project	4,188		
Dept of Education and Youth Affairs	2,897		
Human Rights Commission	1,000		
NSW Health Commission	5,000		
Accountancy and Legal Studies			
Sundry Research Donations	946		
Australian Accounting Research Foundation	5,000		

	\$
Statistical Society of Australia (NSW)	
Mathematics Prize	50
Swire Group Scholarship	7,750
A. J. and I. Waters Geology Prize	261
Western Mining Prizes - Mining	150
- Metallurgy	300

Special Purpose Funds (Others)

ADAB Projects - Geology	5,288
- E. Booth	1,510
Australia Council - Musician in Residence	4,451

	\$
AUIDP - Projects - Computing Science	31,901
Dept of Housing and Construction -	
Assoc Prof D. Clarke	
Mathematics	8,383
School of Creative Arts Patrons	25,608
Sundry Donations:	
English	706
Geography	252
Geology	321
Theatre South - PDS Appeal	6,370
The Illawarra Credit Union, Employment	
Scholarships	9,000
University of Wollongong - Library Appeal Fund	2,564
- Sundry Donations	1,280

Appointments, resignations and promotions

APPOINTMENTS

Name	Designation	Department/School/Faculty
Professor P. C. Arnold	Professor	Mechanical Engineering
Dr N. I. Aziz	Lecturer	Civil & Mining Engineering
Dr M. Magdy	Lecturer	Electrical & Computer Engineering
Dr A. Basu	Lecturer	Mechanical Engineering
Dr J. F. Guest	Lecturer	Economics
Vis Assoc Prof A. Goscinski	Lecturer	Computing Science
Mr F. Yuen	Lecturer II	School of Health Sciences
Miss M. C. Martin	Lecturer II	School of Health Sciences
Dr B. W. N. Lo	Senior Lecturer II	School of Industrial & Admin. Studies
Mr O. C. Curtis	Lecturer I	Faculty of Education
Miss I. L. Stein	Lecturer II	School of Health Sciences
Mr G. J. Stafford	Lecturer	Computing Science
Ms J. Fyffe	Lecturer I	Faculty of Education
Mr R. Kohoutek	Lecturer	Civil & Mining Engineering
Dr N. L. Adams	Lecturer I	School of Industrial & Admin. Studies
Dr C. J. Coleman	Lecturer	Mathematics
Mr P. L. Dawes	Lecturer	Business Policy & Operations
Dr L. A. Maciaszek	Lecturer	Computing Science
Mr R. T. Harper	Lecturer I	School of Creative Arts
Dr A. J. Boag	Lecturer II	School of Health Sciences
Dr J. B. Gross	Lecturer I	School of Health Sciences
Mr B. A. Moore	Lecturer	Mechanical Engineering
Mr P. W. Wypych	Lecturer	Mechanical Engineering
Dr S. G. Pyne	Lecturer	Chemistry
Dr L. Jayamanne	Lecturer	English Literature & Drama
Mr M. D. Bray	Lecturer	Economics
Mr J. Nothdurft	Lecturer	Accountancy & Legal Studies
Ms S. E. Hopkins	Teaching Fellow	Economics
Dr V. K. Wan	Lecturer	Accountancy & Legal Studies
Dr P. R. Nickolas	Lecturer	Computing Science
Ms M. A. Lees	Lecturer	Business Policy & Operations
Mr J. Whitehead	Teaching Fellow	Mathematics
Ms L. Scott-Murphy	Lecturer II	School of Creative Arts
Mr L. Duncan	Lecturer II	School of Creative Arts
Mr R. P. Handley	Lecturer	Accountancy & Legal Studies
Mr E. Moore	Visiting Teaching Fellow	Accountancy & Legal Studies
Mrs K. Cooper	Teaching Fellow	Accountancy & Legal Studies
Mr M. K. Er	Teaching Fellow	Accountancy & Legal Studies
Mr D. Platt	Lecturer	Electrical & Computer Engineering
Mr R. B. Kiltie	Visiting Teaching Fellow	Mathematics
Dr M. Guilhaus	Lecturer	Chemistry
Dr J. C. Ianziti	Research Associate	European Languages
Mr L. M. Farnell	Lecturer I	School of Health Sciences
Dr W. S. Bowie	Lecturer	Computing Science
Dr E. J. Steele	Lecturer	Biology
Dr I. A. Ansari	Research Associate	Electrical & Computing Engineering
Dr G. H. Williams	Lecturer	Mathematics
Mr P. M. Tap	Teaching Fellow	Biology
Dr R. J. Dunn	Lecturer	Philosophy

Mr B. A. Richardson
 Mr J. N. Dewynne
 Dr D. J. Ayre
 Mr I. Reinecke
 Dr R. J. W. Truscott
 Miss J. Chaplin
 Dr W. J. Zealey
 Dr K. G. Russell
 Mr N. E. Hall
 Dr S. Rajagopalan
 Mr A. Monaem
 Mrs R. Muston
 Mrs J. M. Goard
 Dr D. T. O'Brien
 Professor J. S. Hagan
 Dr R. P. Banaugh
 Dr F. L. Ramsey
 Ms J. B. Turbill
 Dr E. Y. Baafi
 Professor C. Fasano
 Mrs P. A. McGill
 Mr J. F. Chicharo
 Dr K. W. Ng
 Miss D. P. Coleman
 Dr T. Ghazy
 Dr G. G. Wallace
 Vis Assoc Professor C. S. Yu

Teaching Fellow
 Research Associate
 Lecturer
 Senior Lecturer
 Lecturer
 Teaching Fellow
 Lecturer
 Senior Lecturer
 Senior Lecturer II
 Lecturer
 Lecturer II
 Half Lecturer
 Visiting Teaching Fellow
 Lecturer
 Professor
 Lecturer
 Lecturer
 Lecturer I
 Lecturer
 Professor
 Lecturer III
 Lecturer
 Lecturer
 Lecturer
 Research Associate
 Lecturer
 Teaching Fellow

Electrical & Computer Engineering
 Mathematics
 Biology
 History and Philosophy of Science
 Chemistry
 Biology
 Physics
 Mathematics
 Faculty of Education
 Mechanical Engineering
 Faculty of Education
 Biology
 Mathematics
 Economics
 History
 Computing Science
 Mathematics
 Faculty of Education
 Civil & Mining Engineering
 Faculty of Education
 School of Health Sciences
 Electrical & Computer Engineering
 Electrical & Computer Engineering
 English Literature & Drama
 Chemistry
 Chemistry
 Electrical & Computer Engineering

RESIGNATIONS

Dr R. Hartley
 Mr P. N. Duncan
 Dr R. A. Witton
 Mr M. M. Dean
 Mr C. Colella
 Mr G. Stonehouse
 Mr L. Fantinel
 Dr N. I. Smith
 Mr C. N. Si
 Mr P. J. Goodison
 Assoc Professor E. Gellert
 Dr E. Kokot
 Dr C. Smith
 Ms J. M. Fyffe
 Mr R. Kiltie
 Dr D. Pearson-Kirk
 Professor A. D. Brown
 Mr K. Rigby
 Mr W. N. Funnell
 Dr Y. W. Wong
 Dr L. Chan
 Mr G. Kilarr
 Mr J. Chu
 Dr R. P. Banaugh
 Dr R. J. Dunn
 Dr G. J. Manger
 Prof R. B. Leal
 Vis Prof J. Peck
 Dr K. Davies
 Mr M. Salaheldin
 Dr D. P. Hogan
 Dr W. Bowie
 Mrs R. Muston
 Mr L. Farnell
 Mr W. Tomczyk

Lecturer
 Lecturer II
 Head
 Lecturer
 Teaching Fellow
 Lecturer II
 Tutor
 Lecturer
 Teaching Fellow
 Teaching Fellow
 Associate Professor
 Senior Lecturer
 Lecturer
 Lecturer I
 Visiting Teaching Fellow
 Senior Lecturer
 Professor
 Senior Lecturer
 Lecturer
 Lecturer
 Research Associate
 Lecturer I
 Teaching Fellow
 Lecturer
 Lecturer
 Lecturer
 Professor
 Professor
 Senior Lecturer I
 Teaching Fellow
 Principal Lecturer
 Lecturer
 Lecturer
 Lecturer I
 Research Associate

Computing Science
 School of Creative Arts
 Centre for Multicultural Studies
 Sociology
 Electrical & Computer Engineering
 School of Creative Arts
 Psychology
 Electrical & Computer Engineering
 Civil & Mining Engineering
 Mechanical Engineering
 Chemistry (Retired)
 Chemistry (Retired)
 Economics
 Faculty of Education
 Mathematics
 Civil & Mining Engineering
 Biology (Retired)
 Faculty of Education (Retired)
 Accountancy & Legal Studies
 Civil & Mining Engineering
 Civil & Mining Engineering
 Faculty of Education
 Accountancy & Legal Studies
 Computing Science
 Philosophy
 Business Policy & Operations
 European Languages
 Computing Science
 Faculty of Education (Retired)
 Civil & Mining Engineering
 Faculty of Education (Retired)
 Computing Science
 Biology
 Health Sciences
 Civil & Mining Engineering

PROMOTIONS

Dr D. P. Dunne	Reader	Senior Lecturer	Metallurgy
Dr F. A. Gul	Reader	Senior Lecturer	Accountancy
Dr A. Jakubowicz	Reader	Senior Lecturer	Sociology
Dr Y. C. Loo	Reader	Senior Lecturer	Civil & Mining Engineering
Dr N. Aziz	Senior Lecturer	Lecturer	Civil & Mining Engineering
Dr P. T. Crisp	Senior Lecturer	Lecturer	Chemistry
Dr B. L. Davidson	Senior Lecturer	Lecturer	Philosophy
Mr J. G. Jackson	Senior Lecturer	Lecturer	Accountancy & Legal Studies
Mr W. D. McGaw	Senior Lecturer	Lecturer	English
Dr J. A. Schuster	Senior Lecturer	Lecturer	History & Philosophy of Science
Dr J. Thampapillai	Senior Lecturer	Lecturer	Economics
Dr A. K. Tieu	Senior Lecturer	Lecturer	Mechanical Engineering
Dr R. J. Truscott	Senior Lecturer	Lecturer	Chemistry
Mr H. Flugelman	Lecturer I	Senior Lecturer I	
Dr E. O. Booth	Lecturer I	Senior Lecturer II	
Dr B. C. Watkin	Lecturer I	Senior Lecturer II	
Ms J. Steel	Lecturer III	Lecturer II	
Mr A. Zelinsky	Lecturer III	Lecturer II	

Study leave and professional experience leave

Name	Department	Duration (weeks)	Principal location
Dr B. L. Davidson	Philosophy	22	Melbourne
Dr E. Dayal	Geography	26	USA, India
Mr P. McKerrow	Computing Science	21	USA
Dr R. Lilly	Biology	24	Germany
Mr G. Rando	European Languages	26	Italy
Mr M. Donaldson	Sociology	15	Japan, Europe, USA
Dr F. S. Piggan	History	26	UK, USA
Dr B. Walker	Psychology	22	UK
Dr S. Ali	Economics	21	Europe, Japan
Dr F. Howard	Mechanical Engineering	25	USA
Dr P. Laird	Mathematics	26	Canada, Europe
Dr R. Markey	Economics	26	UK, Europe
Prof L. Schmidt	Civil & Mining Engineering	26	Australia, UK, Europe
Mr D. Davis	English Literature & Drama	21	UK, Europe, N. America
Dr G. Nanson	Geography	22	UK
Dr R. Whelan	Biology	26	UK, USA
Dr R. Johnston	History & Philosophy of Science	24	Australia, UK, USA
Dr P. Hamilton	Education	26	UK
Dr R. Chowdhury	Civil & Mining Engineering	15	Australia, China, Japan
Dr F. Marengo	History	26	Australia, Europe
Assoc/Prof L. L. Viney	Psychology	10	Europe, USA
Prof J. Chipman	Philosophy	26	USA
Dr C. Cook	Electrical & Computing Engineering	7	USA, UK, Europe
Prof P. Arnold	Mechanical Engineering	19	UK, Europe, USA
Dr P. Carr	Geology	26	Australia, NZ, Canada
Dr G. Delamore	Metallurgy	26	Canada
Miss D. Jones	English Literature & Drama	26	UK, Europe, Canada
Dr Y. C. Loo	Civil & Mining Engineering	4	Thailand, China
Dr R. Henry	Psychology	26	USA, UK
Mr A. Coote	Accountancy & Law Studies	22	Australia, NZ
Dr F. Prokop	Mathematics	26	Australia
Miss D. Gillam	English Language	22	UK
Prof J. Blake	Mathematics	26	Australia, UK
Dr S. Ginsberg	Psychology	15	Australia
Mr M. Atkinson	Metallurgy	17	Australia
Prof P. Fisher	Physics	18	Australia
Dr A. Fielding	Education	4	UK
Dr B. Watkin	Education	26	USA
Mr A. Smith	Education	25	USA, Canada
Mr J. Mitchell	Creative Arts	26	USA
Mr H. Fuller	Health Studies	16	Australia
Mr B. Murray	Education	26	Australia
Mr J. Scarlett	Education	10	USA, India
Mr G. Gedge	Education	6	China
Mrs A. Chapple	Creative Arts	16	UK, Europe, USA
Mr P. De Lacey	Education	7	Canada
Dr G. Ianziti	European Languages	4	Europe
Dr R. Wheway	Mechanical Engineering	3	USA
Dr D. Asquith	Education	4	USA/UK
Mr M. Harris	Education	4	USA/UK

NOTES

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